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# THE
# DUBLIN JOURNAL
# OF
# MEDICAL SCIENCE.

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# THE DUBLIN JOURNAL

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## PART I.

## ORIGINAL COMMUNICATIONS.

### ART. I.—*Notes on the Year's Work at Farnham House.*[a] By W. R. DAWSON, M.D., F.R.C.P.I., Medical Superintendent.

LAST year, in publishing some scattered notes of the work of the previous twelve months, I ventured the opinion that an occasional selection of the small observations and experiences of practice might not be without interest and value; and I can only offer the same excuse for the following rather disjointed notes.

*Heredity in the Causation of Insanity.*—Although conclusions drawn from small numbers are proverbially unreliable, still, in view of the fact that an accurate history can be much more frequently elicited in the class of patients dealt with in a private institution than in that inhabiting most public asylums, it seemed worth while to ascertain to what extent a neuropathic heredity prevailed at Farnham House, taking the last 50 patients of whose family history any facts were forthcoming. In making such an inquiry it must be borne in mind that what is inherited is, not a disease, but a diathesis which may manifest itself by the occurrence not only of insanity, but of other nervous diseases, as well as in the form of alcoholism and similar indications of lack of inhibition. Evidence of the presence of this diathesis may therefore be sought in the existence of such indications not only in parents and grandparents, but in brothers and sisters, in the collateral relations, and even in descendants, though, of course, the probability of a neuropathic taint will be the greater the nearer the relationship. On this principle evidence of a neuropathic heredity is to be found in no less than 39 out of the 50 patients, or 78 per cent., a proportion more than double that which Savage gives, viz., "fully one-third of all the cases."[a] Of these 39 cases, 28 had a certain family history of actual insanity, occurring in the direct line in 8 cases, amongst brothers and sisters in 14 cases, in the collateral relations in 5 cases, and in the descendants in 1; in 7 more insanity was more or less probable (in two of which number there was a neuropathic heredity of other sorts in addition); while the remaining 4 cases had a history of various other nervous affections. Of the 11 cases in which heredity was denied, some had relatives who impressed one as being decidedly neurotic; with others, however, this was not the case, so far as known. They included 2 cases of alcoholic insanity, 2 senile cases, 1 post-febrile case—all varieties not very dependent on heredity; while of the remainder 5 were cases of melancholia, the form of insanity nearest the normal.

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[a] Slightly altered from a paper read before the Medical Section of the Royal Academy of Medicine in Ireland, May 22, 1901.

*Paranoia.*—There is scarcely any form of mental disease in which neuropathic heredity plays a more important part than in paranoia or chronic delusional insanity, of which two cases were admitted during the year. This is well borne out by both cases, but especially by the second, which has run a very typical course up to the present, and will probably be a fair example of the *délire chronique* of Magnan.

Case I.—The patient, a man of thirty-two, was admitted last November. So far as known, no relative had been in an asylum, but his grandmother, father and brother were alcoholics; his mother and other members of his family, hemiplegic; and a sister extremely eccentric, if not indeed insane. He had had two bad falls on his head in early life, and one more recently. From his childhood he was eccentric, did not join in games, and tended to be solitary, morose, and self-centred—peculiarities which grew upon him, especially for some years past, so that he appears to have had no intimate friends, and it was impossible to get to know him well. Withal he had an excellent opinion of himself (which of late has been increased by an injudicious relative with an exaggerated estimate of the antiquity and importance of his family), and he resented anything like an order or strict routine, this and other causes rendering him useless in his business, and unable to get on with his fellows. He seems to have been perfectly sober and moral. During the year before admission he developed delusions, mainly of suspicion, though with some of grandeur, thinking that he was about to receive a very high appointment, and later that he was watched by detectives, and that attempts were made to poison him. A trip to America was tried, but the only lasting result was a crop of fresh delusions (regarding Indians and the like). Finally he shut himself in his room and refused food, which was the immediate cause of his being sent from home. At Farnham House he has improved somewhat, but is morose and solitary, full of delusions of a suspicious type, and suffering at times from visual and auditory hallucinations of an unpleasant character. His chance of recovery is, of course, practically nil, and he will probably develop further delusions of grandeur, and ultimately become demented, should he live long enough.

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[a] Allbutt's "System of Medicine," Vol. VIII., p. 187.

Case II.—The other case is that of a lady, aged thirty, suffering from the less common erotic variety of paranoia, with a very elaborate and definitely fixed delusion. Her mother suffered at the menopause from delusions of the same class, so that in this instance the actual character of the disease was inherited, in a modified form, and at an earlier age, in conformity with the law of inheritance in such cases. She appears to have been an amiable, pleasant, healthy and capable, though somewhat reserved, girl, and to have taken her mother's place in the family when the latter became ill, from which, as well as from other circumstances, she was involved in much hard work and worry. A male relative whom she liked was married about a year before her admission, and from this appears to date a delusion, gradually growing in intensity, that she is herself his wife, and that his real wife is only her "proxy;" to which was afterwards added the belief that a lady friend was "proxy" for the gentleman, and she accordingly insisted on behaving to this friend in a very loverlike manner, though without any manifestation of the grosser forms of eroticism. Her conduct to this lady was the immediate cause of her admission in July last, and it may be said at once that the intensity of these delusions shows no sign of abating. At first she behaved well, but soon began making persistent and foolish efforts to escape, and in a few weeks became excited, violent and mischievous, wet and dirty in her habits, and sleepless at night; also refusing food, and maintaining an obstinate silence. Administration of suprarenal gland was started at the beginning of September, and on the 13th an improvement was noticeable, which continued until she showed to an ordinary observer no appearance of anything wrong mentally. (She is, and always has been, very reticent about her delusions.) It may be noted that the blood-pressure fell during the acute attack, and rose afterwards. She was allowed out on probation at Christmas, but the experiment did not succeed, and she continues much in the same state, showing a certain perverseness, restlessness, inability to control her impulses in any direction, and unreasoning likes and dislikes which she rather obtrudes; but apart from her rudeness on account of the latter she is to the casual eye ladylike and pleasant. It may be mentioned that her troublesome peculiarities tend to be aggravated at the menstrual periods, and that the menses are somewhat irregular. The prognosis here also is unfavourable.

CASE III.—One of the deaths during the year was that of an old paranoiac who succumbed to sarcoma of the thigh in February. There was a bad heredity in this case also, a sister having been insane, but little is recorded about the case, which had been in the institution for the last 32 years. He was latterly a good deal demented, and it was not always easy to elicit his delusions, which, however, appeared to be of persecution, of late at all events by occult means, at the hands of mysterious individuals whom he called "Maguires."

This tendency to invent names for the mysterious authors of their discomfort is a common one in paranoia, and is present also to some degree in two other sufferers from this form of insanity who still remain.

CASE IV.—The first of these is a gentleman who has been tormented for the last 52 years by agencies of whom he is very unwilling to speak, but whom he has called "itinerants" and other names, who annoy him by sending unpleasant smells through the floor, by causing diarrhœa, and in other ways, including a process which he calls "montriculation." This case well illustrates another point, viz., the comparatively slight tendency to general dementia in paranoiacs, the patient, even after so long a period of insanity, being well-mannered and gentlemanly, and preserving a very fair amount of intelligence.

Case V.—The last case is annoyed by electricity brought to bear upon him by "spies" and "tramps," and suffers from hallucinations of hearing in addition. He has less of the social instincts than the previous case, but also retains a good deal of intelligence, though he has suffered from his delusions for the last 33 years at least.

This last case appears to be an example of the *délire chronique* alluded to above, as the delusions of persecution have gradually during the last few years become associated with those of grandeur, the patient's imaginary position steadily increasing in importance as time goes on. From being at first merely the Duke of Wellington and a General of Division, he has grown to be a "Prince, Peer, and Field Marshal," a Grandee of Spain, the heir to the throne of England, and owner of the property in the neighbourhood of the institution. Thus two of the cases approximate to this variety, but the third and fourth prove that the succession of delusions of grandeur to those of persecution and suspicion is by no means a necessary one.

*The Epochal Insanities.*—Another intensely hereditary form of insanity is that occurring during *adolescence*, of which the admissions furnished one example, the form being acute mania.

Case VI.—The patient, who was twenty-five years of age, had a bad heredity, a sister having died in an asylum, while another appeared to be very neurotic. She herself was thin, pale, and looked much younger than her years. She was put on fattening diet, with cod-liver oil, and made a good recovery in about six months. The case presented few points of peculiarity, and the only one deserving of note is the excellent effect produced by the administration of suprarenal gland, which was given in the earlier part of the case and appeared to bring about marked improvement. It was stopped after about two months, and (seemingly as a result) progress slowed down, until the administration was recommenced about a month later, after which the rate of convalescence became much more rapid. In this connection it may be noted that the blood-pressure, which was only 100 mm. when the second administration was begun, had risen to 110 mm. at the time of discharge. She has kept exceedingly well ever since.

Two other cases admitted, although a little over the adolescent period, presented the usual hysteroidal characters of adolescent mania, and were both recurrent cases, in which the first attacks had occurred within the period. They may, therefore, perhaps be included here as, at least, akin to adolescent insanity. In neither case did suprarenal gland produce any very marked result, but it should be noted that in one the blood-pressure was high (she had albuminuria at one time). In the other, however, the pressure could not be taken owing to her restlessness.

CASE VII.—Another case belonging to the group of epochal insanities which was admitted was one of *climacteric insanity* of the ordinary melancholic type, in a woman whose mother had been insane about the same period—another mode in which heredity shows itself—and whose sister was also insane. Her blood-pressure was extremely high, being no less than 180 mm. a week after admission, and small doses of erythrol tetranitrate certainly seemed to do good in the earlier and more acute period of the attack. When last taken the blood-pressure was only 125 mm., and the patient, though not well, and still showing some traces of delusion, has made much progress, though, as usual in insanity at this period, the rate is slow.

One case of pure *senile melancholia*, a gentleman aged eighty-nine, for many years an inhabitant of the institution, died last summer of nephritis following a sharp attack of influenza which he had caught while on a Christmas visit to his relations; and it may be mentioned that nephritis formed a sequel of influenza in several other cases who suffered in the epidemic of that disease the previous winter (that of 1899–1900).

*Insanity of Toxic Origin.*—The toxic origin of many forms of insanity is now-a-days so strongly insisted on, and occupies so much attention, that cases bearing on the subject acquire a special interest, and of these several have been under treatment during the year.

CASE VIII.—The first deserving mention is a *post-scarlatinal* case of which an account was given in the notes of last year,[a] but which terminated since the beginning of the year under review. The patient, a girl of twenty-three with good heredity, after an ordinary uncomplicated attack of scarlatina was seized with acute mania of a markedly hysterical character. On fattening treatment she improved rapidly and had gained two stone in weight at the end of the year. Up to that time she had shown a marked tendency to relapse at her menstrual periods, but this ceased after March, and she was finally discharged recovered about five months after admission. As pointed out in the last notes, this case illustrates Dr. Clouston's statement that no hereditary tendency is required for the development of post-febrile insanity.

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[a] Dublin Journal of Medical Science, August, 1900.

Case IX.—The relation of *gout* to mental disease is an interesting one in this connection. An acute delirium has been described, but by far the commoner form of gouty psychosis, especially in elderly persons, is melancholia, of which the admissions furnished one example. The patient, a man of seventy-two, whose sister has been insane, was admitted in April, 1900. He had been a quiet, kindly, steady-going man of business, who had borne severe pecuniary reverses at former times with philosophy, and recovered from them. It may be safely asserted that there was no unduly high living, and he is a total abstainer; but it is more than probable that sufficient exercise was not taken. For ten years he had suffered from attacks of gout occurring about once in the year and lasting for a few weeks; the disease affecting chiefly the great toe-joints, but also other joints of the feet, and the hands. A trace of albumen was found in the urine as long ago as 1895 during an attack. He has also had mitral valvular disease (stenosis) for a long time, and his digestion has latterly been poor. Since December, 1899, he had had five attacks of gout, which were in each instance followed by mental depression passing away on the commencement of the next attack; but the last fit of depression was peculiarly severe, and was accompanied by noise, mental confusion, restiveness, refusal of food, insomnia, vague threats of suicide, and ill-defined delusions of a depressing character. On admission he was thin, depressed and fearful, would beat his hands together occasionally and shout, and his power of attention was impaired. He complained much of thirst. The cardiac dulness extended to the left nipple line, and a loud mitral diastolic murmur was audible. There was a trace of albumen in the urine. A certain amount of flatulence was present. He was somewhat anæmic. With tonic treatment, attention to the digestive system, fresh air and moderate exercise, he improved a good deal at first and lost his delusions, but could not be got to gain in weight. Soon, however, he began to express the fear that he was going to be killed for purposes of investigation, and to refuse articles of food, on the ground that they had been drugged, and he also worried a good deal about spiritual matters. Yet his misery did not appear very acute, being of the weak senile type, which fears everything and twists things to sinister meanings. Later the delusions took the form of want of money, and also stoppage of the bowels, which latter led him to refuse food, so that he had to be tube-fed from the end of July until the middle of October, and lost weight continuously. It being thought that here, if ever, the administration of orchitic substance might be beneficial, it was begun in the middle of June and continued until October 9th, the patient receiving 15 gr. per diem in dried tabloid form up to the beginning of September, when the daily quantity was increased to 30 gr., and again on the 23rd to 60 gr. On October 13th he began to take his meals again and to improve otherwise, mentally and physically, and he seems now to have subsided into ordinary mild senile dementia with some depression, his physical health being very fair for his age, his urine free from albumen, and his digestion and sleep passable, while he has gained in weight.

It seems probable that the effect of the orchitic substance was to produce loss of weight owing to increased katabolic changes, as substances rich in nuclein are known to do, and that the marked and immediate improvement which followed its cessation was due to the reactionary stimulus to anabolism, which is also a recognised result.

Of other toxic cases, two, more or less due to *alcoholism*, were admitted—one of mild ordinary alcoholic dementia, with the weakness of initiative common in such cases; the other marked by almost total loss of memory for recent events, though the patient, even from the beginning, could remember and tell stories. He had various delusions of orientation and otherwise, chiefly due to the want of memory, and had a weak dilated heart, enlarged liver, and albuminuria. All of these have now subsided or greatly improved. Memory, though not good, is not remarkably bad, and the patient is probably in better health, physically and mentally, than he has been for years. The case is interesting as showing the great power of recuperation possessed by alcoholic cases, even when, as in this instance, the heredity is very bad. It may be mentioned that at one time the patient suffered from attacks of distress of an anginous character, which were cut short once or twice by amyl nitrite. As the state of the heart improved under digitalis these passed off.

Two cases of mental depression associated with *glycosuria* were admitted during the year, one of which especially was of an exceedingly interesting character; but as these will be dealt with later at greater length than would be possible here, nothing further need be said at present, except that both made good and rapid recoveries;[a] the first under anti-diabetic, the second under mainly general treatment.

There can be little doubt that intoxication of some kind plays an important part in the symptoms of *cancer*, and also in those of *chronic nephritis*, though in the latter the high blood-pressure perhaps contributes. Consequently, it is no matter for surprise that a case suffering from both these ailments should develop mental abnormalities of a depressed type, though it is, perhaps, somewhat curious that this development should have been sudden.

Case X.—The immediate cause was some trifling fatigue, after which the patient, a woman of sixty-nine with some insane heredity, became suddenly depressed and suicidal, and developed delusions both of her own sinfulness and of ill intentions on the part of others towards her, with some confusion. It was only after this that she was discovered to be suffering from chronic nephritis and cancer of the stomach. Blood-pressure was extremely high, about 190 mm., but erythrol tetranitrate produced no good results, and had to be discontinued, as it caused headache. Later the blood-pressure fell a little, and she improved somewhat, but has continued up the present very depressed, with a good deal of irritability of temper, and a certain amount of vague fearfulness, the latter being less in evidence of late. It may be noted that the mental condition improved considerably at first after she became confined to bed owing to an attack of pericarditis, and that there seemed to be a certain connection between accessions of depression and irritability and signs of increased cardiac weakness. Probably the constant gastric discomfort—there has been little actual pain—serves to keep up the irritability.

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[a] The latter case was discharged since March 31st.

In this connection it may be noted that no fewer than 9 of the patients admitted showed *albuminuria*, though sometimes only temporarily, and it is interesting to note that of the 9, 4 were cases of melancholia, while 3 others showed a tendency to depression at times or constantly. The other two were respectively a case of acute mania, whose urine was of a febrile type, though there was no abnormal temperature, the albuminuria being transitory; and a case of hysteroidal mania, with a good deal of stupor. In both of these latter the blood-pressure was high.

*The Mean Arterial Pressure in Insanity.*—Allusion has been made above in several places to the state of the blood-pressure. Observations with Hill and Barnard's sphygmometer were taken in the course of the year in 10 cases—4 of melancholia, 3 of mania, 1 of paranoia, 1 of alcoholic dementia, and 1 of minor epilepsy, sane, but with a tendency to depression. The observations were made in the forenoon in order to avoid errors due to the diurnal variations. All the melancholic cases showed high pressure, which in all came down somewhat under treatment, and very markedly where the mental improvement was considerable—in fact, a case which has already recovered showed abnormally low pressure before discharge. The three maniacal cases were more variable, which corresponds with the observations of others. In one case the pressure was low during the attack, but rose to normal on recovery; in the second it was high all through, but rose when recovery was almost complete, probably owing to the effects of suprarenal administration, falling without bad symptoms when the drug was stopped. The third case, which has not yet recovered, showed high pressure up to the beginning of March. This case is somewhat stuporose, and also had albuminuria at one time. Of the remaining cases, blood-pressure in the paranoiac was high at first, fell during a spell of acute excitement, and rose again, but not so high, during a period of comparative mental health which followed the acute attack. The alcoholic case almost certainly suffers from chronic nephritis, and has been liable to fits of transitory depression, though cheerful in the main. His pressure was high on the only occasion on which it was taken. Only one observation was made on the sane epileptic also, whose pressure on that occasion was high. It will thus be seen that the observations, as far as they go, on the whole support the received view that states of mental depression and of stupor are associated with high arterial pressure; states of mental exaltation and of excitement, with low arterial pressure—facts which, to a certain extent, appear to afford a legitimate, though at present somewhat empirical, basis for treatment.

*Physical Health.*—The general physical health was good during the year, and there was an absence of anything of the nature of an epidemic, but one or two interesting points arose which may here be briefly alluded to.

Case XI.—On October 9th last the epileptic patient above mentioned, who had been feeling somewhat weak and wanting in appetite for some days, began to pass black stools. He had several motions during the day, two very large ones at night, and one the following morning, when he felt weak and looked ill and blanched. No pain or tenderness was complained of, the abdomen was soft, the spleen not enlarged, the tongue large, moist, pale, and fairly clean, the temperature 98·8°, pulse 112. The temperature never rose above this. Opium was given, and no further large motions were passed. On the 13th it was noted that the liver was a little large, and the first heart-sound not quite clear, probably owing to the anæmia. The urine showed no abnormality. He was seen in consultation by Dr. Wallace Beatty, who found slight tenderness and a little resistance on deep pressure in the right hypochondrium, and agreed that the most probable diagnosis was duodenal ulcer, though with so few symptoms this could not be considered certain. On one occasion after this the patient vomited matter streaked with blood, but otherwise no further unfavourable symptoms arose, and he made a good recovery. Later in the autumn a very slight return of the hæmorrhage took place, but was of no moment, and the general health since has been very fair. The fits ceased for a day or two after the hæmorrhage. The patient subsequently passed through a period of pretty severe depression, probably owing to anæmia.

The only noteworthy point about a slight attack of facial erysipelas, which took place last autumn in a patient suffering from acute melancholia, was that it did not produce that improvement in the mental state which is so often seen after intercurrent febrile affections.

Case XII.—The last illness of a patient who died in January presented some points of interest. She was a strong, healthy, stout woman of about fifty-four, suffering from chronic mania, who had never had any physical ailment of importance for years except a mild attack of influenza in the previous winter. On January 1st last she complained of pain in the right side, and when examined was found to have a pleuritic friction-sound, and some rise of temperature, which latter subsided after four days. Some albumen was present in the urine. The rub became more distinct and widespread, and the patient was delirious and restless, though she continued to take her food well. There was little or no cough, and no evidence of implication of the lung except a few crepitating râles, which soon disappeared. On the 16th the temperature began to rise again, and remained up for the remainder of her illness, never exceeding 103°, and dropping about 2° on the average each morning. Respiration now became more rapid, there was a good deal of coughing, and the signs of effusion developed, exploration on the 23rd showing a slightly turbid fluid containing pus-cells and masses of diplococci. About this time a fœtid smell was noticed when the patient coughed, but not otherwise. On the 25th the chest was opened in the 8th right intercostal space by Mr. T. E. Gordon, who found a small quantity of very fœtid sero-purulent fluid, numerous adhesions, and a boggy mass suggesting gangrene of the lung. The wound was drained and dressed, and all went well for a time, but sleep failed, and the patient sank gradually and died on the following day. The pulse was not very rapid until the last, when the respiration also increased greatly in rate.

It seems strange that so serious a condition could have developed with such slight physical signs and so little indication of general weakness or malaise, and the cause of the gangrene is also somewhat mysterious. Probably the pleurisy was the initial lesion, the diplococci, either from their virulence or from the impaired resistance of the tissues of a chronic lunatic, setting up such severe inflammation as to lead to necrosis of the surface of the lung.

*Treatment.*—Many points of treatment have already been alluded to, but one or two further notes may be made on this subject here. Thyroid administration was not tried during the year, no case occurring in which it was thought to be indicated. In several cases where the blood-pressure was high erythrol tetranitrate was given, on the whole with somewhat disappointing results, though in one case of melancholia it certainly seemed to do good in ½ gr. doses night and morning. In most of the other cases it produced headache, and had to be stopped. One case of recent acute melancholia, in addition to being given erythrol, was kept in bed for some time, as recommended by Lewis Bruce, but the treatment produced little result in this instance. The administration of suprarenal gland, which has the opposite effect of raising the blood pressure, while, at the same time, diminishing tissue-oxidation, was tried in seven cases, principally of mania, and the results, on the whole, are encouraging. This subject will shortly be dealt with fully elsewhere.

The comparatively new drug, bromipin, which has been much extolled by German writers, was employed with good effect in the case of minor epilepsy which has already been referred to. The patient tolerated the ordinary bromides badly, and was often reduced by them to a state of great depression. Bromipin has now been given for about ten months, with the result that he has been much happier on the whole, and has not been bromised, while the fits, though not less frequent, have been in general much shorter and less severe.

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## ART. II.—*Inoculation as a Preventive against Typhoid Fever.*[a] By DR. HENRY M. CULLINAN, L.R.C.P.I., L.R.C.S.I.; Senior Assistant Medical Officer, Richmond District Asylum, Dublin.

IN venturing to write on the subject of preventive inoculation against typhoid fever—a measure of treatment which, so far, is on its trial, and which can hardly be said to have been yet adopted by the medical profession—I should like to preface my remarks by stating that, in presenting the result of my experiences gained in the

[a] Read before the Section of State Medicine in the Royal Academy of Medicine in Ireland, on Friday, April 26, 1901.

inoculation of over five hundred female patients in the Richmond Asylum during the recent epidemic of enteric fever, I lay no claim to having made a discovery, and it is possible that, had my opportunities for testing the efficacy of this treatment fallen into other hands, more interesting results might have been forthcoming. At the same time I have considered that the conclusions to be drawn from the occurrence of this epidemic in the Richmond are interesting, and justify me in placing before you the result of my observations, principally in the hope that any discussion which my remarks may give rise to will be of practical utility, and draw from those present suggestions which may guide us in the preventive treatment of this disease.

The epidemic referred to occurred in the Asylum last year, extending over some five months, and was of considerable severity. There had been cases of enteric with long intervals between each for about a year, but in August last the number of cases began to assume the proportions of an epidemic. When eighteen cases had occurred within three weeks it became evident that a serious state of affairs existed, and Dr. Conolly Norman, Medical Superintendent, obtained from Professor Wright, of Netley, a supply of lymph, which he has introduced for inoculation or vaccination against enteric fever. On receipt of this I commenced operations, and inoculated in rapid succession 307 female patients, inoculating each patient once only with $\frac{3}{4}$ c.c. of the serum, commencing on September 6th and finishing on October 3rd. I had then operated on all the patients who lived and slept in the portions of the Asylum which were considered infected areas. It was suggested to me by some enthusiastic medical friends that I should vaccinate only one-half of the patients in each ward, in order to see if the other half would contract the disease, but I did not feel justified in adopting this course, however interesting the result might have been; on the contrary, the cases were becoming so numerous that our only anxiety was to inoculate everybody as rapidly as possible. However, unintentionally, I did, in fact, experiment, inasmuch as we did not inoculate any of the nurses, and it will be observed that in proportion to their numbers our staff suffered much more severely than the patients; also, having completed the inoculation of these patients, comprised in certain wards, and numbering, as stated, 307, the operations were stopped, and it was not until November 5th, when it was found that the wards which had not been gone over, and which had been looked on as immune, began to contribute cases, and severe cases, to the number attacked, that I again started and inoculated the remaining patients in the house, by which I mean all those of 55 years and under that age.

The most interesting and important point in these experiments is, of course, to determine whether the vaccination confers any immunity against typhoid fever. I have come to the conclusion that it is of the utmost value in this respect, and I hope I am not incorrect in forming that opinion, deduced as it is from the records kept of the dates on which cases occurred and the very important and practical fact that out of a total of 511 patients inoculated, only seven contracted the disease, and almost all of these were, in my opinion, in the incubation stage when inoculated. As already mentioned, eighteen cases had occurred when the vaccination was commenced on September 6th. Of these, ten were patients and eight were nurses. Owing to want of hospital accommodation we were able to operate on only 40 patients at a time, and as these were kept three or four days in bed it took some time to go over them all.

While the inoculation was in progress—that is, from September 6 to October 3—nine fresh cases occurred, of which only three had been operated upon. Of these three there is no doubt that one was actually in the early stage of the disease at the time of inoculation, as, owing to an oversight, her temperature was not previously taken, but was found to be 101° immediately after the operation, remaining high and at once assuming the characteristic curve of enteric fever. Case No. 2 was found to have normal temperature, and was apparently in good health before inoculation. The temperature rose after the operation, but instead of coming down in a few days, persistently remained high and assumed enteric features almost at once, and, as immunity is said not to be conferred until from three to five days have elapsed after inoculation, I think it may be concluded that she would have contracted the disease in any case. The third case was inoculated on September 22nd, and on the 24th was quite well apparently, but on the 28th was found to have a temperature of 100°, and a couple of doubtful rose spots. On the 30th there was a typical crop of spots, and the case from that out was a severe one, complicated later on by double pneumonia, from which, however, she recovered, and has since left the Asylum.

I would not place this case definitely amongst those suffering from prodromal signs at the time of inoculation, but allowing three or four days to the serum to confer immunity, and as the spots began to appear six days after the operation, I think we may fairly refrain from blaming the lymph. A girl who had been inoculated on October 3rd, having left hospital three days after vaccination, was attacked very severely on October 15th. She was found on this date to have a crop of spots. This patient, I regret to say, died. It must be remembered that in an asylum patients are frequently walking about with a high temperature and severe symptoms unknown to the medical staff and without complaint; and it is only when they get very ill that they are noticed to be so. Accordingly, it is difficult to determine when this patient began to be the subject of enteric fever.

On November 5th, owing to several cases having occurred amongst patients not inoculated, I resumed operations, and vaccinated 204 females, making a total of 511. I am much indebted to my recent colleague, Dr. William Starkey, for his assistance in inoculating a considerable number of these patients.

On November 14th a patient who had been inoculated on September 22nd—nearly eight weeks previously—and had been quite well in the interval, was found to have a most profuse crop of spots. This is an example of a case in which the serum failed to do its work, and it also exemplifies the fact that lunatics will often walk about with a severe disease attacking them, seemingly in normal bodily health, as this woman only complained of feeling ill when she actually exhibited the spots in great numbers. Another patient, inoculated on November 12th, was very ill after the operation, and continued so with a high temperature. On the 20th she had a crop of spots, having had all the appearances of typhoid in the interval. This may, I think, be considered a case in which the patient was sickening for the disease at the time of inoculation.

Another woman, about fifty years of age, operated upon on November 5th, and getting over the effects in three days, was found on November 17th with a temperature of 101°, and had a very severe attack, followed by a relapse, from which she nearly died. I consider that on this occasion the serum acted detrimentally, and probably accentuated the severity of the attack.

In order to prove the efficacy of serum inoculation as a preventive measure it is necessary to show that those treated were living at the time within an infected area. This was undoubtedly the case in the Richmond, as, although the place was thoroughly overhauled by the Public Health Authorities, and a new system of drainage laid down with great promptitude, cases continued to occur with persistent regularity, mostly amongst the staff—a total of 17 nurses being attacked, of which 9 contracted the disease after the inoculation of patients commenced, none of the nurses having been operated on. Twenty-eight inmates were attacked during the inoculation process, of whom only 7 had been operated upon—showing that during this period 37 cases had occurred, proving conclusively that the source of infection still existed. The last case which occurred was a girl admitted about five weeks when she was attacked, a fact which adds weight to this statement.

The question might be asked, Would those patients who were inoculated and escaped the disease have contracted it had they not been inoculated? This, of course, I am not in a position to answer, and it would, I think, be quite impossible to ascertain. The fact remains that they *were* inoculated and *did* escape.

With respect to the constitutional disturbance following inoculation it did not prove in any of the cases in my experience to be of great severity. In every case, almost, the temperature rose within a couple of hours, in some few instances reaching 103° and 104° the day of operation, while 101° and 102° were common heights for it to attain. It usually fluctuated for a couple of days, coming down gradually from the maximum, and being generally normal on the third day. In every case operated on four-hour temperature records were kept. Except in the cases already specially mentioned the patients were able to be up and about on the fourth day. The principal symptom was headache, from which 85 suffered, some of them very severely. Vomiting or retching occurred in 63 cases, loss of appetite and refusal of food in 33, diarrhœa in 2, rather severe prostration in 3; 4 complained of abdominal pain, while stiffness in the back and soreness over the seat of inoculation occurred in 9 and 22 cases respectively. The last symptom—soreness in the flank, where each patient was vaccinated—was not in any case accompanied by local manifestation beyond slight redness of the part, with some swelling.

I should have liked to have been able to compile a table in which the agglutinative action of the blood serum of each patient on the bacilli before and after inoculation was shown, but unfortunately the rapidity with which cases occurred created something of the nature of a panic, added to which, coming on during the vacation season, we were handicapped as regards medical assistance, for which reasons the inoculations were performed as quickly as possible without first examining the blood, except in a certain number of cases, not very large. On examining the reaction of the serum in these cases I found that in every instance there was a certain amount of clumping of bacilli, in some much more than others, but in no case did I find the remarkably thick clumping which is shown in the blood of patients actually suffering from enteric. I believe that the fact of our patients only having been inoculated once contributed to this lessening of the Widal reaction, as Dr. Wright recommends a second inoculation about twelve days after the first, but, as already stated, we were unable to carry this out. Although from a pathological point of view this omission to inoculate a second time is unfortunate, I think it proves clinically more conclusively the usefulness of the lymph, as there is no doubt our patients were exposed to infection during the entire period of the process.

I append a short table showing the ages of those attacked, distinguishing those inoculated and those not inoculated; also the ages of all who were inoculated, whether attacked with the disease or not. The result, in brief, shows that of a total of 655 who were liable to be attacked 54 contracted the disease—*i.e.*, 8·24 per cent. Of the 511 patients inoculated 7, that is 1·36 per cent., were attacked after the operation. Forty-seven cases occurred, *not* having been previously inoculated, that is 7·16 per cent. of the total liable to infection.

| Age | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 to 55 | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| Inoculated | 9 | 35 | 107 | 83 | 149 | 59 | 48 | 21 | 511 | |
| Contracted disease (previously inoculated) | — | 2 | 1 | 3 | — | — | — | 1 | 7<br>(1·36) | 54 |
| Contracted disease (*not* previously inoculated) | 1 | 16 | 6 | 6 | 8 | 7 | 2 | 1 | 47<br>(7·16) | |

In connection with this table I should point out that I have made no distinction in it between the nurses and the inmates who were attacked. In looking at these two classes of patients separately it must be allowed that the insane are more liable to be attacked than the sane by a disease like enteric; their mode of life and general environment, taken together with their mental disability, render them peculiarly susceptible to any disease which is rife. Judging the results of the inoculation from this point of view (and this should not be overlooked in arriving at a decision) we find that 17 out of 114 nurses, or 14·9 per cent., were attacked, none of the nurses having been operated upon; while 37 inmates out of a possible 541 liable to attack, or 6·83 per cent., were the subjects of enteric. That is to say, more than double the percentage of sane and robust people, none of whom were inoculated, were attacked, as compared with the percentage attacked amongst the inoculated, all of whom were, owing to their insanity, more likely to suffer from physical ailments.

In conclusion, I should be sorry to make any dogmatic statements as to the absolutely preventive action or otherwise of inoculation against typhoid fever. If one can credit the results as evidenced amongst the soldiers in South Africa, enormous numbers of whom were vaccinated, it would appear to have been somewhat of a failure. There may have been circumstances in their case which militated against the success of the procedure. I cannot help thinking that it was of use in the epidemic in the Richmond, but I shall be glad to hear the remarks of more experienced physicians than myself, who, though they probably have not had an opportunity of testing the lymph to the same extent as I have, can bring clearer views than mine to bear on the question.

### BILOCULAR STOMACH.

**M. Pinatelle** (*Lyon Médicale*) presented to the *Société des Sciences Médicales* a woman on whom M. Vallas performed a plastic operation on the stomach. The patient had rapidly lost flesh, her weight fell from 55 kilos to 39 kilos in a short time. The malformation of the stomach was caused by the cicatrix of an old gastric ulcer. A cicatricial band divided the viscus into two pouches—a cardiac one and a pyloric one. Communication between the two was kept up by a small orifice that allowed of the passage of fluids only. M. Vallas made a free opening between the pouches, and twenty days after the operation the patient had gained two kilos in weight.

### LEPROSY.

**Dr. De Monro**, of St. Paul, Brazil, is (*Deut. med. Woch.*) accredited with recommending the poison of snakes as a remedy for leprosy. The poison is caught on French wadding, which is then saturated with glycerine, and the liquid is pressed out and preserved in hermetically sealed tubes.

### HEROIN.

**Dr. Martinson**, writing in the *N. Y. Med. Times*, states that heroin and heroin hydrochloride, when used hypodermically, act promptly in bronchial asthma.

### VAGINAL IRRIGATION.

**Large** hot-water vaginal irrigations should never be employed by a healthy, pregnant woman, writes Dr. J. Burtenshaw (*N. Y. Med. Jour.*), for the reason that they reduce the bactericidal power of the vaginal secretions.

# PART II.

## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

*Modern Surgery: General and Operative.* By John Chalmers DaCosta, M.D.; Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; Surgeon to the Philadelphia Hospital and to St. Joseph's Hospital, Philadelphia. Third Edition. With 493 Illustrations. Pp. 1117. London: W. B. Saunders & Co. 1900.

In this volume, which has been revised and enlarged, the author devotes more of his attention to treatment than to clinical features and pathology, thus differing from most text-books on surgery. Though revised, we think many improvements can easily be made in future editions. Seldom do we find a sentence descriptive or even indicative of the pathology of the different subjects described. The section on ulcers is not very good; but that on gangrene is better, though the description and treatment of Ludwig's angina might easily be improved, while it is a new departure to see this condition described as one of the forms of gangrene.

Septicæmia is used in a sense confusing to the student in that it includes both septic infection and septic intoxication. The section devoted to rickets is not very good; the whole subject and its treatment occupy less than a page. The chapter on tumours does not present a single illustration save one to represent Erichsen's method of ligaturing nævi, while of this method no description is given in the text, and the illustration does not accurately represent his procedure. There is no microscopical description of any of the different tumours.

Dermoids and their treatment occupy only 19 lines.

The chapter on fractures is one which should lend itself particularly well to illustration, yet but few illustrations are given. This is also the case in the section devoted to dislocations.

The word "abduct," line 3, page 522, should read "adduct."

The operations on the gall-bladder and bile-ducts are described, but we look in vain for the clinical phenomena indicative of the conditions requiring these procedures.

The localising phenomena of cerebral abscess and the clinical features of sigmoid sinus thrombosis are not fully described.

No indications are given for performing the different bronchotomies.

The description of the diseases of the mouth and tongue is too short to be of any service.

We are under the impression that vasectomy for hypertrophied prostate was recommended by Mr. Reginald Harrison and not by Dr. Mears.

The section on diseases of the testicles is poor.

In describing carbuncle, the words "benign anthrax" are appended in brackets. Surely it would be more in accordance with modern surgery to give up using the term "anthrax," even though qualified by the adjective "benign," in connection with this disease. It is, to say the least of it, confusing to students.

There is one other point to which we should like to direct attention as being open to criticism—viz., the best site for performing the operation of paracentesis pericardii, which is given by the author as the fifth interspace, two inches to the left of the sternum. In this situation the pericardium can be tapped easily enough, but the pleural cavity will almost certainly be penetrated as well, and with disastrous results should the effusion happen to be purulent.

The section devoted to the surgery of the respiratory organs is excellent, as is also that on abdominal surgery, with the single exception to which attention has already been drawn. The various operations are nicely described and very well illustrated.

The section devoted to appendicitis is one of the best in the book.

No less than 50 golden rules for procedure in primary hæmorrhage are given. These embrace the whole subject, and are well worthy of study.

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*A Manual of Syphilis and the Venereal Diseases.* By **James Nevins Hyde, A.M., M.D.,** and **Frank Hugh Montgomery, M.D.**

The second edition, revised and enlarged, of this work is a remarkably well arranged volume of about six hundred pages, including a very complete index to their contents. The first 337 pages are devoted to syphilis, its phenomena and treatment, and are illustrated by admirable plates of some of the most important lesions; with the exception of a few lithographs, the majority of these are reproduced from Mracek's Atlas of Syphilis, and, in our judgment, have been improved in the process by a toning down of the colouring which is rather exaggerated in the originals. The descriptive matter is well written and graphic, and, although devoid of anything which can claim the merit of originality, the book throughout bears the mark of practical experience, accurate observation, and careful clinical research on the part of the authors. While recognising the now indisputable fact that the only remedy for syphilis is mercury, they clearly point out that due attention to hygienic considerations, and a careful avoidance of the abuse of this sovereign remedy are as essential during the whole course of treatment as the medicine itself. The doses which they recommend are strikingly small as compared with those that, but a few years ago, were unhesitatingly prescribed. For internal administration they prefer the protoiodide in doses from gr. $\frac{1}{16}$ to $\frac{1}{3}$; the bichloride, from gr. $\frac{1}{60}$ to $\frac{1}{12}$; calomel, from gr. $\frac{1}{10}$ to $\frac{1}{4}$. Treatment by the inunction of Ungt. Hydrargyri of the United States Pharm., combined with suitable ferruginous tonics internally, is the mode specially advocated in the treatment of severe cases accompanied by cachexia. In this we fully concur.

The advantage of aiming at complete suppression of syphilis by resorting to mercurial treatment immediately on the first recognition of the initial lesion is, we think, reasonably questioned. It tends to make patients underestimate the importance of a sufficiently prolonged course of treatment to ensure a permanent immunity from future trouble. They truly say—"If the exanthem be aborted or suppressed, the future of the patient is in a degree clouded." We can fully endorse their statement that "one vivid and generalised efflorescence is an augury for good in an otherwise healthy subject." We cannot concur in the condemnation of the use of warm baths in conjunction with other treatment of syphilis; a judicious and properly regulated course of hydropathy is one of the most effectual allies which mercury has in its war against this enemy of mankind, and without its aid the victory is seldom complete. The concluding 240 pages are devoted to gonorrhœa and its consequences; it is a concise and practical treatise, and forms a useful manual for reference upon the subject.

On the whole, the volume is one which does the authors credit, and although it is more a compilation of what has been previously said by many authors than a work of originality, it cannot fail to make a local reputation for them as having a special knowledge of venereal diseases, and will doubtless be found a useful book of reference by Chicago students and medical practitioners there.

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*Atlas and Epitome of Special Pathologic Histology.* By DR. HERMANN DÜRCK. Authorised translation from the German. Edited by LUDVIG HEKTOEN, M.D. Circulatory Organs; Respiratory Organs; Gastro-intestinal Tract. With 130 Coloured Illustrations on 62 Lithographic Plates. London: W. B. Saunders and Co. 1900. Pp. 158.

THIS volume, which is one of Saunders' Hand-Atlases, is the first part of the Atlas of Pathological Histology, which is to be completed in three volumes—a second volume of special pathology, and one of general pathology. It consists of a large number of chromo-lithographic plates, with a text, giving shortly the changes which take place in the organs figured, in the different diseases to which they are subject. The figures, which have been taken from preparations made by the author, and which are all carefully drawn to scale, are on the whole extremely good and well chosen. In fact, we know of no small work which can compare with this in the beauty and fidelity of the illustrations. The author, in his preface, insists that the book must be looked on only as an assistance and guide in actual work with the microscope. As such it will be found most helpful, while the text, short though it be, is accurate and conveys well the main facts of pathological histology. If the two remaining volumes are as good as this, the whole will form a very valuable Atlas of Pathological Histology, and one which no laboratory should be without.

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*A Text-book of Pathology.* By ALFRED STENGEL, M.D. With 372 Illustrations. Third Edition, Revised. London: W. B. Saunders and Co. 1900. Pp. 873.

THE chief characteristic of this book is its practical character. The subject is treated always from the point of view of the clinical pathologist. Thus in each chapter, after the description of the changes which the organs undergo, there is a section on the pathological physiology, giving an explanation of how the clinical symptoms are connected with the morbid changes in the organs. This arrangement is very useful, and must be most attractive to students, who generally have a great difficulty in seeing how the different branches of their studies are connected with one another. As a rule, the author does not enter into prolonged discussions on doubtful points, but there is never any doubt as to his own opinions, as, for instance, in his rejection of the parasitic nature of the supposed cancer organisms.

Throughout, the descriptions are clear and accurate. The account of the bacteria and other parasites is, although short, sufficient, and the tumours are well described. In the special part the different morbid changes in the organs are fully and fairly described, and the work has an exceedingly good index.

The drawings in the text are numerous, and, if not in all cases up to those we often see now in point of execution, are always illustrative, and show well what they are intended to convey. A few of the figures in the text are coloured, and there are some full-page coloured plates.

On the whole this text-book is one which we can conscientiously recommend to all those who require a moderately-sized work on clinical pathology.

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*Surgical Anæsthesia: Addresses and other Papers.* By HENRY JACOB BIGELOW, A.M., M.D., LL.D. Boston: Little, Brown & Company. 1900.

THIS volume contains the articles by Dr. Bigelow relative to the discovery of surgical anæsthesia, and, needless to say, they are most interesting reading. With all of the learned author's views we cannot, however, agree. Writing to the *Boston Medical and Surgical Journal*, December 9, 1846, he gives his approval to Morton's efforts to secure a patent for his "Lethon"—the fanciful title which Morton gave to ether.

Dr. Bigelow gives to Morton the full credit for the discovery. He knew nothing of Dr. W. C. Long's administrations of ether in 1842, and of his successful operations on patients under its anæsthesia. He writes:—"In September, 1846, nobody knew that ether inhalation was sure, complete, and safe." In this statement Dr. Bigelow is wholly wrong. Dr. W. C. Long and his medical *confrères* in Georgia, and his patients, all knew of it; next, but for Long's extreme caution in testing and re-testing the anæsthetic, the world would have known of it in 1842—known of it without any self-seeking or striving for gain, just as the surgeons of Jeffersonville and Athens knew of it from Dr. Long as a priceless blessing freely given to suffering humanity.

In his paper "A History of the Discovery of Modern Anæsthesia," Dr. Bigelow enters very fully into the Wells-Morton-Jackson controversy.

The book is valuable as a record of the early administrations of the anæsthetic, and of the observation of Dr. Bigelow that the respirations stopped before the pulsations at the wrist—a fact that was re-told by Surgeon Lieut.-Colonel Lawrie to all the profession, who, following the teaching of inaccurate observers, were giving attention exclusively to the circulatory system, to the great danger of the patient.

It is also interesting to notice the many failures to induce anæsthesia that occurred in Morton's practice. It was surely fortunate for him that a good dose of laudanum had preceded the ether inhalation in his first case, and the graphic description of the anæsthetisation of Alice Mohan, when "the unwonted fumes of aromatics burnt to mask the emanations from the yet mysterious agent," shows that Morton had more of the desire of gain than the love of his fellow-man in the introduction of "lethon."

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*A Dictionary of Medicine and the Allied Sciences.* Comprising the Pronunciation, Derivation, and full Explanation of Medical, Pharmaceutical, Dental, and Veterinary Terms, together with much collateral descriptive matter, numerous tables, &c. By ALEXANDER DUANE, M.D.; Assistant Surgeon to the New York Ophthalmic and Aural Institute; Reviser of Medical Terms for Webster's International Dictionary. Third edition, enlarged and thoroughly revised. With eight full-page coloured plates. London: Rebman, Limited, 129 Shaftesbury-avenue. 1900.

THERE is certainly no lack of medical dictionaries in the opening days of our enlightened Twentieth Century. If the burdensome five years' curriculum of the period look appalling, as it does to most beginners, with its cast-iron annual examinations, and its obstructive mountains of science, every one of which has to be removed or tunnelled in the intellectual progress of the professional candidate, the latter, on the other hand, can well be congratulated on the complete array of scientific weapons which are prepared ready to his hand, thoroughly adapted to their respective functions in this herculean series of labours of the mental engineer. We look back with bitterness on the unenlightening manuals of reference which we were obliged to use in our own student days, and compare them with the search-light clearness of diction and illustration which illuminate the pages of such volumes as that now before us. The present one is printed with exquisite clearness, and includes a series of well-executed and most instructive illustrations. Its general "get-up" is exceptionally tasteful; and has been executed in the best style of the well-known publishing firm of Rebman, Limited, to whom the profession has within the past few years become indebted for many of its very best volumes of reference.

We have consulted this dictionary on questions new and old, and it has answered every one—and, in each case, in language of peculiar conciseness and lucidity. We have already hinted that the twentieth century has started scientific business with an overflowing wealth of professional dictionaries. We have consulted, as we believe, most, if not all, of them which can be regarded as worth consulting, and we unhesitatingly declare this to be the one which has best satisfied us, and approaches our ideal most closely. We need hardly add that the work carries with it into the world our best wishes for the success which it assuredly deserves.

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*Obstetric and Gynecologic Nursing.* By Edward P. Davis, A.M., M.D.; Professor of Obstetrics in the Jefferson Medical College, Philadelphia, and in the Philadelphia Polyclinic; Obstetrician to the Jefferson and Polyclinic Hospitals, &c. London: W. B. Saunders & Co. 1901. Crown 8vo. Pp. 402. Illustrated.

We suppose that Dr. Davis was obliged to offend someone by the manner in which he spelt the title of his work; but as the copy before us is issued from a London publishing office it ought to be written in English and not in American. If a work is issued from an American publishing office, then we cannot grumble if it is written in American, although literary Americans still write in English; but when the publishing office is in the Strand, and when there is no intimation that the work is not written in English, we have a right to expect that it will be so written.

Apart from the language in which the work before us is written, we have every praise for it. It places before nurses in a clear and straightforward manner their duty, their whole duty, and nothing but their duty. Care is taken to point out the limitations imposed on a nurse, and the necessity for not overstepping such limitations. The importance of strict asepsis and antisepsis is also made clear, and altogether the work is most modern in its teaching.

There is one curious statement. Is it really "believed that Julius Cæsar was extracted from his mother by abdominal incision, and hence delivery in this way has been commonly called Cæsarean section?" Is it not rather the case that the operation is termed Cæsarean section because an infant so delivered was *cæsus e matris utero*?

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*Transactions of the American Orthopædic Association,*
Vol. XIII. 1900. Philadelphia.

In these well-bound and clearly printed Transactions some instructive papers are always found, and this volume contains contributions from London and German authorities. The following are especially of interest.

The President's address on orthopædic teaching shows the state of specialism in America. Out of 76 Colleges of Medicine in America, Professors or Lecturers specially teach the following subjects:—

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|---|---|
| Ophthalmology ... ... ... | in all schools |
| Rhinology ... ... ... | „ „ |
| Laryngology ... ... ... | „ „ |
| Gynæcology ... ... ... | „ 60 „ |
| Diseases of Children ... ... | „ 59 „ |
| Neurology ... ... ... | „ 58 „ |
| Orthopædic Surgery ... ... | „ 38 „ |
| Genito-Urinary Surgery ... | „ 37 „ |

This is in advance of the English system.

A paper by Dr. Ridlon, of Chicago, on "The Scorbutic Spine," clearly describes this peculiar disease resulting from sterilised food in infancy. Dr. Oscar Vulpius, of Heidelberg, has a paper on the treatment of scoliosis by night repose, in a plaister jacket; and Mr. Edmund Owen, of London, has an interesting note on the cause of wasting of the limb in hip-joint disease. These papers will well repay perusal.

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*Laryngeal Phthisis.* By RICHARD LAKE, F.R.C.S. London: Rebman. 1901. 8vo. Pp. 94.

IN writing a few lines about this monograph the reviewer's work is a pleasant and easy one. It may be confidently recommended as a real addition to the literature of the subject, and not a mere recapitulation of other books.

The author approaches his subject from a practical point of view, and shows that although this affection must be classed as a serious and dangerous complaint, there are many hopeful points, and that treatment, both medical and surgical, carried out with skill and patience, and with due regard to the latest general principles, can be brought to a conclusion satisfactory alike to doctor and patient. The work is a small one, easy and pleasant to read, well illustrated, and goes straight to the point, which is what all want in these days of hurry and scurry.

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*Diseases of the Nose and Throat.* By F. DE HAVILLAND HALL, M.D., F.R.C.P.; and HERBERT TILLEY, M.D., F.R.C.S. Second Edition. London: Lewis. Post 8vo. Pp. 600.

THIS volume is one of Lewis's practical series, and no better term could be applied to it than that of practical; all padding, useless quotation of out-of-date theories, long-winded attempts to make differences where none exist, are left out. The book is short and well written, easy to read, and contains exactly what the busy man wants—namely, things in their right places, under their proper headings correctly placed, not scattered all over the work. The terminology is excellent, and follows that of the Germans; when a term is once chosen it is kept throughout the book. The chapters devoted to nervous lesions may, where all is good, be picked out as especially worthy of note, and the authors have succeeded in rendering their meaning clear and distinct. It is a book that should find a place in the library of the general practitioner as well as in that of the specialist, to both of whom it will, one can confidently say, prove worthy of perusal and repay the time and money spent upon it.

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*A Treatise on Diseases of the Nose and Throat.* By ERNEST SHURLY, M.D. London: Henry Kimpton. 1900. 8vo. Pp. 718.

THE arrangement of this book differs materially from the common form, in that the diseases of the different parts—nose, pharynx, larynx, &c., are placed under their respective headings, and not divided up into regions. This has a great and material advantage for the reader, such as a student or young practitioner who wishes to make a complete study of each disease, and thus carries out the idea of the author in presenting the subject in the form most easily followed. The volume is well and thoroughly illustrated, and the chapters on influenza, which the writer divides into endemic and pandemic, syphilis and tuberculosis, are specially worthy of note, and may be read with advantage not only by the student, but also by the specialist. The subject of the diseases of the accessory sinuses of the nose has been dealt with very shortly, which is the only disappointing feature in the work, though it is hard to see how the author could have dealt with this portion properly without unduly increasing the size of the volume. The question of intubation of the larynx is fully dwelt upon, and is explained by excellent illustrations.

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*A Text-book of Diseases of the Nose and Throat.* By D. BRADEN KYLE, M.D. London: Saunders and Co. Second Edition. 1900. 8vo. Pp. 617.

THIS is the second edition of a work which has received very favourable support, in that the first edition appeared only in 1899, and a new one became necessary in 1900. The subject is approached from the anatomical and pathological point of view, and thus is presented in a different light from that to which one is usually accustomed. The illustrations are very good, especially the anatomical ones, relating to the nose, which are quite above the average outside a purely anatomical work. The book is thoroughly up-to-date, and is a useful addition to one's library, and may be confidently recommended for reference in pathological questions.

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*Lectures on Nasal Obstruction.* By A. MARMADUKE SHEILD, M.B. (Camb.), F.R.C.S. (Engl.). London: Rebman. 1900. 8vo. Pp. 106.

THIS is a small book devoted to the causes of nasal obstruction and their treatment. The various causes are set out in detail and are fairly complete, and are easily understood from the excellent description of the author, though but little space has been given to the consideration of the ætiology. In the chapters on treatment, the operations advised are as a rule those best calculated to give relief, but the method of carrying them out appeals rather to the general operating surgeon than to the specialist. However, the book will be a guide and help to those who have not given much time to the study of this special point, and who want a handy manual on that most important branch of surgical work.

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*Obstetrics: A Manual for Students and Practitioners.* By DAVID J. EVANS, M.D.; Lecturer on Obstetrics and Diseases of Infancy, M'Gill University, Montreal. London: Henry Kimpton. 1901. 8vo. Pp. 430. With 149 engravings.

THIS is a clearly written and nicely published little work on obstetrics, on which the author must, on the whole, be congratulated. It contains a large amount of information in a small space, but it has a tendency to be too scrappy in places. The treatment is not always quite what we should ourselves consider to be the most suitable, but, such as it is, it is usually clearly described. Dr. Evans has selected his diagrams and drawings with care, and the result is that they are of a more practical nature than is sometimes the case in kindred works. On the other hand, his drawings of a pelvis are not always placed correctly on the page, the inclination of several being incorrect, and the instruments which his illustrations represent are not always as modern as they might be. In spite of these shortcomings, we are sure the book will be appreciated by students.

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*Points of Practical Interest in Gynæcology.* By H. MACNAUGHTON JONES, M.D., M.Ch., Q.U.I.; Ex-President British Gynæcological Society, &c., &c. London: Baillière, Tindall & Cox. With 12 Illustrations. 1901. Demy 8vo. Pp. xii. and 124.

WE gladly welcome a book from the hands of the author of "Diseases of Women and Uterine Therapeutics." The book before us is written chiefly for men in practice with the object of giving an up-to-date survey of the main points in gynæcology.

The opening chapter deals in an admirable manner with asepsis and hæmostasis in operative procedure, pointing out mistakes one sees so frequently made even by the most distinguished operators.

The author then gives his personal experience of errors in gynæcological diagnosis—a most valuable chapter in which he does not spare himself.

A fault occurs in this work which is a common one now-a-days, and that is the illustrations. Some of them, although beautifully executed pictures, do not teach what the text would lead one to believe they are intended to teach. For instance, Plate VI., Fig. 1, does not give any assistance in the avoidance of a similar diagnostic error.

The chapters on medicinal and operative therapeutics discuss thoroughly the use of drugs, baths, &c., in uterine disorders, and contain much useful information on the indications for and limitations of operative procedure.

There are two points in these chapters we take exception to—first, the recommendation of patent medicines, and secondly, the author's views on rapid pathological diagnosis. We know that gynæcologists are very fond of "lightning" diagnosis from the microscopist; but, as a rule, any case which can be diagnosticated "in a few minutes," with the aid of the microscope, will usually be obvious to the naked eye; whereas the doubtful cases, such as very early cancer, will require a considerable amount of careful work on the part of the microscopist before he can make a diagnosis.

The chapter on the relation of insanity to uterine disease is the best in the book, and the author may be congratulated on having given in so few words an excellent account of a very difficult subject.

Finally, the author's treatment of the "Indications of Operations . . . . in Myoma" is thorough and impartial, and will well repay the reader who may have doubts as to the proper procedure in these cases.

We have no hesitation in recommending this book to anyone who wishes to obtain the most recent views on the leading points in gynæcological practice; and the concise and attractive manner in which it is written should make it very popular amongst busy practitioners, who have not the time to wade through the larger text-books.

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*Human Placentation: An Account of the Changes in the Uterine Mucosa and in the Attached Fœtal Structures during Pregnancy.* By J. Clarence Webster, B.A., M.D. (Edin.), F.R.C.P.E., F.R.S.E.; Professor of Obstetrics and Gynæcology in Rush Medical College; Fellow of the American and Chicago Gynæcological Societies, &c., &c. Chicago: W. T. Keener and Co. 1901. Pp. 120. With 233 Illustrations.

The work before us is the result of investigations, which Dr. Webster has carried on for the last eleven years, on "the pregnant uterus during the third, fourth, fifth, sixth, seventh, eighth, and ninth months, in the first and second stages of labour, in the third stage (removed by Porro-Cæsarean section), and during the various stages of the puerperium." A main part of the work was undertaken when the author was assistant in the Department of Midwifery in the University of Edinburgh, a further portion when he was Lecturer on Gynæcology at M'Gill University, Montreal, and the remainder during his Professoriate at Rush Medical College. Dr. Webster must be heartily congratulated on the result of his toil. He has placed before his readers a most comprehensive account of the various structures which compose the placenta, of the changes which occur in the uterine mucosa, and of the philogeny of the placenta. An excellent feature of the work is that while Dr. Webster recites the various theories, which are held by authorities, on any vexed question, he also distinctly states his own opinion, and the reasons which have led him to form such an opinion. In one point his book is deficient. It sadly needs an index.

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*Essentials of Diagnosis.* Arranged in the Form of Questions and Answers Prepared Especially for Students of Medicine. By SOLOMON SOLIS-COHEN, M.D., Professor of Clinical Medicine and Therapeutics in the Philadelphia Polyclinic, &c., and AUGUSTUS A. ESCHNER, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic, &c. Second Edition, Revised and Enlarged. Philadelphia: W. B. Saunders. 1900. Pp. 417.

THE rapid appearance of a second edition of this work shows that it must have been received with favour. The important points in the symptoms and differential diagnosis of most internal complaints are clearly stated, and the arrangement admits of prompt reference. Indeed the only fault of arrangement is that the explanation of the frontispiece is given on an extra unnumbered page at the end of the book, where it is very likely to be overlooked.

Occasionally humour is displayed, as in the following extract from page 87:—

"How is membranous croup to be distinguished from diphtheria?

"Until the physician acquires sufficient experience to warrant a personal opinion, he had best consider all cases of membranous croup diphtheritic. The discrimination is difficult and disputed."

The book will be found useful when time does not admit of reference to text-books, and the information may be relied on as accurate and modern.

There is a cleverly arranged table of contents, and a delightfully full index.

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*A Handbook of Materia Medica, Pharmacy, and Therapeutics, including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, and Minute Directions for Prescription Writing.* By SAMUEL O. L. POTTER, A.M., M.D., M.R.C.P. Lond.; formerly Professor of the Principles and Practice of Medicine in the Cooper Medical College, San Francisco, &c. London: Rebman, Limited. 1901. Royal 8vo. Pp. 950.

THE large number of new books on Materia Medica and its allied subjects, as well as of new editions of works of the same class, that have lately been published in America is quite remarkable. Some of these have recently been noticed in this Journal, and the merits of not a few of them have received acknowledgment. But in a plethora of books on any one subject, there is an unavoidable tendency to repetition of what has already been written. And, unless a work presents some new facts, or unless it is characterised by some novelty in the manner in which the matter is treated, it is unlikely to command attention. In the United States of America, with its great number of medical Colleges and Schools, it seems to be the growing practice for almost every occupant of a professorial chair to produce a text-book on his particular subject. No doubt, some of such works have deservedly obtained as high a reputation in the United Kingdom as in the States; but a number of them are mere pretentious compilations which have little or nothing to recommend them over previous works, and they must consequently fail to obtain notice outside the comparatively restricted local circle from within which they have had their origin.

The volume under review was first published in 1887; and, as the present edition is the eighth, the work is presumably one that has been found useful. It certainly contains a large amount of information of divers kinds—from the derivation and the pronunciation of words, and from tables of genitive case endings and of Latin verbs used in prescriptions, to the physiological action of drugs; and from a collection of the supposed formulæ of several "Patent Medicines," to 278 pages of applied therapeutics as collected from the practice of some thirty or forty authorities.

Part I.—Materia Medica and Therapeutics—runs to 455 pages. It comprises the official Materia Medica of the U. S. Ph., as well as many unofficial preparations, arranged alphabetically, and is satisfactorily done. In Part III.—"Applied Therapeutics," the therapeutics of different affections (which are arranged alphabetically from "Abasia" to "Yellow Fever") are "exhibited in the form of an analytical index to the recognised text-books of the day." References are given by an initial letter, or name in full, to the authority for the use of each remedy. In many cases formulæ are appended "to serve as guides to the neophyte." We do not approve such a mode of teaching therapeutics. If some of the drugs recommended—especially in acute cases, for example, pericarditis or peritonitis—were given by unskilful practitioners, the results, we fear, notwithstanding the authorities, would be often disastrous to both patient and doctor. Of course, valuable hints may be got from an index of the kind, when intelligently used.

Sections on poisoning, on temperature in disease and on the clinical examination of the urine are comprised in this part; but with what object, except to swell out an already bulky volume, it is difficult to conceive. A similar absence of connection with the subject-matters proper of the book is the inclusion in the Appendix of tables of the differential diagnosis of certain diseases—*e.g.*, pleurisy and pneumonia, typhus and typhoid, &c.

Intercalated—out of place, we think—between Parts I. and III. is Part II. on "Pharmacy and Prescription Writing." This runs to 70 pages, and taken along with the sections on the uses of Latin in prescription writing, placed, for some obscure reasons, in the Appendix, along with tables of weights and measures, &c., more concisely put, contains nothing that is not found in smaller text-books. On page 533 an error is made in giving the number of grains in the avoirdupois ounce of the B.P. as 487½ instead of 437½.

The publishers have issued the work in a creditable style. It has a good index and many useful tables. The otherwise well-written introduction is disfigured by the way in which the etymology of certain terms used in the classification of medicines is given. For example—"Antiseptics (*anti*, against; *sayptekos*, putrefaction)." "Aphrodisiacs (*aphroteeday*, Venus)." Anaphrodisiacs (*an*, without; *aphrodeetay*, Venus)." "Emmenagogues (*emmayneah*, the menses; *ago*, I move)." "Parasiticides (*parrahseetos*, a parasite; *cædo*, I kill)," &c.

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*Modern Medicine.* By Julius L. Salinger, M.D., Demonstrator of Clinical Medicine, Jefferson Medical College; Attending Physician to the Philadelphia Hospital; and F. J. Kalteyer, M.D., Assistant Demonstrator of Clinical Medicine, Jefferson Medical College; Assistant Pathologist to the Philadelphia Hospital, &c. Illustrated. London: W. B. Saunders & Co. 1900. Pp. 801.

Clinical and bacteriological examinations form now-a-days a most important part of medicine, especially in regard to the diagnosis of disease. The methods of carrying out such examinations are, as a rule, not included in works on Practice of Medicine, and the student is obliged to procure separate works on physical diagnosis. To obviate this necessity Drs. Salinger and Kalteyer have brought out the work before us.

It consists of two parts. In the first, which comprises 170 pages, the authors describe the means of making a complete examination. The older methods of obtaining information, auscultation, percussion, the pulse, &c., are described, as well as those which depend on bacteriology and chemistry. The paragraphs on each subject are, as a rule, short, but contain important points, set forth in a clear manner. There are several coloured plates and many woodcuts illustrative of this section.

Part II. forms a work on Practice of Medicine, arranged in the ordinary way. The articles strike us as being short and sketchy, especially those on treatment, in which, as a rule, general hints are given rather than definite directions.

The work has many good points, but, as a work on Practice of Medicine, we are inclined to consider it as being by no means equal to several other American works on the same subject which have appeared within the past few years.

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*The Practice of Medicine.* A Text-book for Practitioners and Students, with special reference to Diagnosis and Treatment. By JAMES TYSON, M.D., Professor of Medicine in the University of Pennsylvania, and Physician to the Hospital of the University; Physician to the Philadelphia Hospital, &c. Second Edition, thoroughly revised, and in parts re-written. With 127 Illustrations, including coloured Plates. London: Rebman, Limited. 1901. Pp. 1,222.

WE are greatly pleased with this excellent and handsome book. It is one of the best works on Medicine that we have seen for a long time. The truth of the author's statement, that "it represents almost purely personal work," is borne out by the perusal of almost every page. It represents the very best of American medical sciences.

Dr. Tyson's work is rather larger and fuller than most of the standard books on Medicine, and the articles in it are correspondingly larger and more complete; especially is this the case with the sections relative to treatment. We do not know any text-book in which the paragraphs on this important subject are more practical or helpful. The advice given relates to many details often omitted in other text-books. We think that the directions as to food and drugs will be found useful by many.

Another, although minor, feature is the historical account of the diseases with which many of the chapters open.

In a few lines a very interesting outline is given of the chief events which have happened in connection with the disease, and of the most important writers who have described it.

Altogether, we have nothing but the highest praise for Dr. Tyson's work, and we warmly recommend it.

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*Introduction to Medical Jurisprudence.* By W. M'CALLIN, M.D., B.Ch., D.P.H., R.U.I.; and of the Inner Temple, Barrister-at-Law. London: Baillière, Tindall & Cox. 1901. Pp. 151.

WE are not favourably impressed with this work. It does not contain very much information, and what is contained in it does not appear to us to be given in a very clear or lucid manner.

The subject which is most fully treated is the state of the law in relation to the various crimes and conditions under consideration. The different statutes are well explained; purely medical matters, however, are passed over very hastily.

We cannot recommend it to any student preparing for examination.

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*Saunders' Year-book of Medicine and Surgery:* being a Yearly Digest of Scientific Progress and Authoritative Opinion in all branches of Medicine and Surgery, drawn from Journals, Monographs, and Text-books of the leading American and Foreign Authors and Investigators. Collected and arranged, with critical editorial comments, under the general editorial charge of GEORGE M. GOULD, M.D: Medicine. Pp. 681. London and Philadelphia: W. B. Saunders & Co. 1901.

THIS portly octavo volume of 681 pages has been prepared with thoroughness and sound judgment, and has been presented to the professional public in the most attractive and most assimilable form. The editors are—Samuel W. Abbott, M.D.; Archibald Church, M.D.; Louis A. Duhring, M.D.; D. L. Edsoll, M.D.; Alfred Hand, Junr., M.D.;

Milton B. Hartzell, M.D.; Reid Hunt, M.D.; Wyatt Johnston, M.D.; Walter Jones, M.D.; A. O. J. Kelly, M.D.; David Riesman, M.D.; Louis Starr, M.D.; Alfred Stengel, M.D.; A. A. Stevens, M.D.; G. N. Stewart, M.D.; Reynold W. Wilcox, M.D. Truly a boon to the busy and conscientious practitioner, the value of which can hardly be over-estimated, it is to be able to see at a glance what has been contributed within the past working year to the common stock of knowledge of whatever subject he may happen to be specially anxious to place himself *au courant* with the most scientific and the most privileged of his professional brethren. There is surely no excuse in the present day for even the most remotely situated member of the profession being more than a few weeks "behind time" in the most progressive department of medicine and surgery. We cordially wish Dr. Gould and his assistants a continuation of the energy and discrimination with which they have hitherto been blessed in the prosecution of this good work. We regard them as occupying a prominent place in the foremost rank of the benefactors, not only of their own profession, but of the suffering members of the human race throughout the world. Needless to add that we consider it to be the duty of all medical practitioners to possess themselves of this volume, and to master its contents.

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*Sexual Debility in Man.* By F. R. STURGIS, M.D.; Formerly Professor of Venereal Diseases in the Medical Department of the University of the City of New York; Sometime Visiting Surgeon to the Venereal Division of the City (Charity) Hospital, Blackwell's Island; Member of the American Association of Genito-Urinary Surgeons, &c. London: Rebman, Limited. 1901.

IN this handsome octavo volume of 432 pages the author discusses, with the evident capacity and attainments of an experienced master, the various aspects of the very important subject with which he has undertaken to deal. There is no doubt that, however lightly the questions which it discusses may be passed over, as they usually are, in the popular text-books and "systems" of surgery, they will always be found by the practitioner to be of the greatest and most absorbing interest both to himself and many of the most influential of his clients at very frequently recurring stages of his professional career. Accordingly we unhesitatingly recommend our readers to master the contents of this outspoken volume, which is the best introduction to the subject that we know of in our language.

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*Catechism Series.* Botany, Part I., pp. 88. Zoology, Part II.—Vertebrata, pp. 127. Edinburgh: E. & S. Livingstone.

A GREAT deal of information in a small space, useful as an *aide memoire—after* practical work, but worse than useless if substituted *for* practical work. Such is a fair description of the new numbers of this well-known series.

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*A Manual of Otology.* By GORHAM BACON, A.B., M.D. With an Introductory Chapter by CLARENCE J. BLAKE, M.D. Second Edition, revised and enlarged, with 114 Illustrations and 3 Plates. London: Henry Kimpton. 1901. 8vo. Pp. 422.

THE author, in his preface, states that in preparing this Manual of Otology he has especially tried to meet the demands of the student by giving him a short and compact treatise of the subject, and, at the same time, affording him a book of easy reference, since he might not always find the time necessary for consulting the more exhaustive treatises upon otology.

The author has fairly well realised the ideal which he placed before him, and has produced a manual where each subject is clearly and succinctly dealt with. The illustrations are fairly good, some of them being after well-known authorities, such as Gray and Politzer, whilst many of them are original for the book.

There is no special originality about either the matter or the arrangement of it, nor, indeed, does the author lay any claim to such, but the book will be found to offer a safe guide and a ready reference to the student of ophthalmology. In the second edition the illustrations have been increased in number and quality, more extended consideration has been given to the Schwartze-Stacke operation and to the use of the normal saline solution in intravenous injections, and in other ways it has been brought well up to date.

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*Diseases of the Thyroid Gland and their Surgical Treatment.* By JAMES BERRY, B.S. (Lond.), F.R.C.S.; Surgeon to the Royal Free Hospital and Lecturer on Surgery at the London (Royal Free Hospital) School of Medicine for Women; Surgeon to the Alexandra Hospital for Hip Disease. London: J. & A. Churchill. 1901. Pp. 367.

THIS book is the outcome of the essay to which the Jacksonian Prize of the Royal College of Surgeons for 1886 was awarded, the Hunterian Lectures, which the author had the honour of delivering at the Royal College of Surgeons in 1891, and a considerable amount of practical experience. It comprises twenty-two chapters, and gives practically everything that is at present known concerning the anatomy, pathology, and treatment of the affections of the gland. The author in the chapter dealing with the causation and distribution of endemic goître lays special stress upon the fact that the true association of goître with hills and valleys is to be found not in the mere external configuration of the ground, but in its geological structure, and the influence which this has upon the drinking water of the district.

In connection with the diagnosis of Graves's disease the author makes no mention of Stelwag's sign or of von Graefe's sign. Exophthalmos is not absolutely essential for the diagnosis. Persistent frequency of the pulse with goître is sufficient to raise a strong suspicion of Graves's disease. In connection with the surgical treatment of Graves's disease the author's conclusion is that it may reasonably be doubted whether surgical treatment is not on the whole worse than useless. Then follows a very good chapter on malignant disease and its treatment, and here the prognosis is very bad indeed, in which respect the author's experience coincides with that of all other surgeons. The greater part of the book deals with the treatment of simple goître and the immediate and remote results and complications of operative interference. A list is appended of 100 cases recently operated upon by the author with only one death—a fact on which he must be heartily congratulated. Most of the operations, which were either enucleations or partial extirpations, were done on account of dyspnœa, a few only being done for cosmetic reasons. The anæsthetic generally used was chloroform, ether being given only in one case in which a general anæsthetic was used. Many of the operations were done under local anæsthesia, a mode of procedure which seems at present to be the safest. The book is profusely illustrated, which adds additional value to the text. We congratulate the author on his success, and recommend his book to the profession for careful study.

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*Science in the Daily Meal.* By Albert Broadbent. Manchester. 1900. Pp. 46.

This is an interesting little handbook of dietetics, written from a vegetarian point of view; it contains a number of dietaries, in all cases exact quantities are given, and cooking notes are generally added. Many hints may be picked up by those worried by dyspeptic patients and appetiteless convalescents.

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*"First Aid" to the Injured and Sick.* An Ambulance Handbook. By F. J. Warwick, B.A., M.B.; and A. C. Tunstall, M.D., F.R.C.S. Ed. Illustrated. Bristol: John Wright & Co. 1901. Pp. 228.

The first page of this little handbook deals with anatomy and physiology, and is in such a condensed form that a beginner would find it hard to learn, except by rote. Part II. deals with injuries and their treatment. The application of bandages is well written, especially the part dealing with triangular bandages; it would, however, be an awkward problem for a student to have to arrange as neatly as shown in Fig. 74b, the bandage shown in Fig. 74.

There is an unnecessarily full list of poisons, but as they are grouped for symptoms and treatment this does not so much matter. On the whole the book is better suited to be a help to the lecturer than a text-book for his pupils.

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*Appendicitis: its Pathology and Treatment.* By CHARLES BARRETT LOCKWOOD, F.R.C.S.; Assistant-Surgeon and Lecturer on Descriptive and Surgical Anatomy in St. Bartholomew's Hospital, &c. London: Macmillan & Co. 1901. Pp. 287.

THIS book gives a description, as far as possible, of the clinical history, morbid anatomy, and microscopical pathological changes, with commentaries on each of 83 cases operated upon recently by Mr. Lockwood. Naturally, we must expect a good deal of repetition, but the author rightly adopted this method of treating the subject, as it seemed the only way by which to learn how to infer the morbid conditions of the appendix from the clinical symptoms, and ultimately place the treatment of appendicitis upon a scientific basis. Much as Mr. Lockwood has done, and he has certainly done a good deal, still much remains to be done before we can state definitely the condition of the appendix in all cases. Generally speaking, it is easy to recognise that perforation or gangrene has occurred, but it is not by any means easy to diagnosticate from the clinical phenomena the other pathological conditions, and this is the most important factor as regards the question of treatment. The question of operation, "Mr. Lockwood states," would cease to be difficult if we could infer the pathological condition of the appendix and the structures in its vicinity. With this we are in complete accord. but until this inference can be more accurately deduced we think a great deal must be said in favour of the method advocated, principally by American surgeons, of operating in every case immediately the diagnosis of appendicitis is made, provided that local circumstances, such as the surroundings, &c., are favourable for such operative procedure.

Mr. Lockwood again raises the question as to whether, in case of appendicitis, associated with perforation and abscess or general septic peritonitis, the appendix should always be removed. Much can be said both for and against this complete operation, because, though we are quite aware that occasionally subsequent attacks and even dangerous complications have followed the incomplete operation of merely opening the abscess cavity or general peritoneal cavity and thoroughly washing it out, and providing for drainage without removing the appendix unless it actually presents itself, still, if the complete operation were to be adopted as a general procedure, then we are strongly of opinion that the mortality after this mode of procedure will far exceed that attendant directly upon the incomplete method plus that due to later complications arising from leaving the diseased appendix. The book is beautifully written, and is illustrated by 52 micro-photographs which lend additional value to the descriptions in the text.

We strongly recommend every practitioner and surgeon to read, re-read, and study it, and we heartily congratulate the author on his success.

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*Appendicitis and its Surgical Treatment, with a Report on* 185 *Operated Cases.* By HERMAN MYNTER, M.D. (Copenhagen); Professor of Clinical Surgery in the University of Buffalo, New York Sate. Third Edition, Revised. Philadelphia and London: J. B. Lippincott & Co. 1900. Pp. 220.

THE present edition, which has appeared three years after the first edition, is revised and written well up-to-date. The reader will find a complete review of the subject and its literature, both American and Foreign, starting with an historical introduction and going on through its ætiology, pathology, symptomatology, diagnosis, prognosis, and treatment. The author has made no attempt to trace any connection between the clinical phenomena and the pathological conditions of the appendix, which, of course, can be done only by studying the clinical aspects and then comparing these with the macroscopical and microscopical appearances of the appendix after removal. Had the author done this in each of his 185 operated cases, and then drawn careful deductions, no doubt he could have furnished his readers with much valuable information. Up to the present we can show very little relation between the clinical phenomena and the pathological lesions found. Until this is done the treatment will never reach the same scientific basis that the treatment of other surgical conditions has reached. At present, the Americans are the most logical in their advocacy of the removal of the diseased appendix in every case as soon after the diagnosis is made as possible. The author endorses and quotes M'Burney's statement—"That no purely medical treatment of actual value in preventing or controlling the disease has yet been presented to the profession." Yet he devotes almost ten pages to medical treatment, as advocated by certain physicians. Dr. Mynter does not go so far as Deaver in America, and, we believe, Lockwood in England, who advocate the complete operation of removing the appendix in every case operated upon, whether associated with localised abscess or with general septic peritonitis, but contents himself—we think rightly too—with removal of the diseased structure if it presents itself under these circumstances, and with leaving it if it does not at once present. We cannot concur with the statement on page 206 that:—"We may without danger explore with a hypodermic needle in different directions in order to find pus." Nor with the statement in another place that: "All these abscesses may in rare cases become reabsorbed spontaneously." In connection with the Bibliography reference is made to a paper in the *British Medical Journal*, June 1st, 1895, by "Thornley Stokes." Of course this should read "Thornley Stoker," now Sir Thornley Stoker.

As a readable *résumé* of the subject, without any illustrations, the little book is worthy of perusal.

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*Electro-Hæmostasis in Operative Surgery.* By ALEXANDER J. C. SKENE, M.D., LL.D., Professor of Gynæcology in the Long Island College Hospital, Brooklyn, N.Y., &c. London: Henry Kimpton. 1901. Pp. 169.

THIS book is issued to supplement the third edition of the author's work on diseases of women, in which the subject is referred to, but altogether too briefly discussed. It thus deals chiefly with gynæcological subjects. The object with which the book is written is to bring into prominence the author's method of supplanting the ligature by the use of electricity. There are few operating surgeons who cannot point to many instances in which trouble arose from the use of the ligature as a hæmostatic agent, consequently to surmount these troubles by sealing the vessels with the electro-cautery, as is done by the author, would certainly be a great advance. In the author's method of applying electro-hæmostatics, accuracy, without the risk of searing other tissues, is its great recommendation; the vessels are picked up by forceps as if to be ligatured, and the electric current subsequently is turned on till the temperature of the part of the forceps holding the vessel is raised to about 180° F. This method is also applicable, according to the author, to the removal of the breast and axillary glands for cancer; to the removal of hæmorrhoids and tumours of the bladder, and finally, it is used by Dr. Skene in the removal of the appendix.

The objection we see to its use as a hæmostatic agent in the removal of the breast is that its application must unduly prolong the operation and thus increase shock. Each chapter is beautifully and abundantly illustrated. The last two chapters are devoted to asepsis and antisepsis in surgery. The subject is one of great interest to the practical surgeon, and the book before us will well repay careful perusal.

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*Surgical Experiences in South Africa* (1899-1900). Being mainly a clinical study of the nature and effects of injuries produced by bullets of small calibre. By GEORGE HENRY MAKINS, F.R.C.S.; Surgeon to St. Thomas's Hospital; Member of the Court of Examiners of the Royal College of Surgeons in England; and late one of the Consulting Surgeons to the South African Field Force. London: Smith, Elder & Co. 1901. Pp. 493.

IN the volume before us will be found an exceedingly interesting and valuable clinical study, given in a most readable form, of the nature and effects of injuries produced by small calibre bullets. The introductory chapter is devoted to general hospital and transport arrangements, as well as their surgical outfit. With regard to the working of the field hospital in the campaign, Mr. Makins says — "It was universally acknowledged to possess a very high degree of excellence. The equipment, with small exceptions, proved equal to the demands made upon it. The mobility of the camps was proved again and again, and the rules governing their administration evidenced by their effectiveness the care and experience which have been bestowed on the organisation of the hospitals."

In concluding the introduction he sums up his experience of the general working of the system during his stay in South Africa thus:—"Adverse criticism was not wanting, and often expressed in the strongest terms by persons totally unacquainted with hospital methods, and apparently unconscious that such excellence as is exhibited in a London hospital is the result of continuous work and development for some centuries, and that such institutions are worked by committees and staffs of permanent constitution." A well-merited tribute of reward is also paid to the R.A.M.C., to whom and to Surgeon-General W. D. Wilson, P.M.O. of the South African Field Force, as well as to the civil surgeons temporarily attached to the R.A.M.C., the book is appropriately dedicated.

Every chapter is teeming with interesting facts, of which illustrative cases are appended, while the author's conclusions are generally clearly drawn. As we should naturally expect, many queer cases are related. Here is an illustration of the unexpected surprises to which sometimes retained bullets give rise. In a man with a retained bullet no steps were taken for its removal (evidently it had penetrated the bladder). During the man's voyage home on a transport he got an attack of retention of urine; as a catheter would not pass, he was placed in a warm bath and shortly after passed a Mauser bullet per urethram, and thus saved himself a cystotomy. A very curious instance of provisional plugging of a wound in the upper part of the brachial artery by an inverted loop of the musculo-spiral nerve is related at page 116. Another interesting case is that of a man wounded at Belmont in the second left intracostal space; the bullet being retained in the thorax he was sent to the base hospital, where he developed signs of wound of the lung in the form of hæmoptysis and left hæmothorax. The left radial pulse was almost imperceptible. The entry wound did not close by primary union, and three weeks later an incision was made into the chest in consequence of fever, progressive emaciation, and weakness. Breaking down clot was evacuated, general improvement followed, and the radial pulse increased considerably in volume. A fortnight later sudden severe hæmorrhage occurred from the external wound, and the man rapidly died collapsed. At the *post-mortem* a traumatic aneurysm, the size of an orange, was found in connection with an oval wound in the first portion of the left subclavian artery, which admitted the tip of the forefinger.

A striking feature is the pyrexia, met with in cases of secondary internal or interstitial hæmorrhages, sudden and decided enough to suggest commencing suppuration.

To single out any special chapter as more interesting than another would be impossible. Intermediate amputations here as elsewhere did badly, while secondary did well. We heartily recommend the study of the book to all who are interested in the subject, whether they belong to the R.A.M.C. or are surgeons in general practice.

The author is to be congratulated on a masterly production, to which, if possible, greater value is added by the large number of plates and illustrations inserted.

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*Records from General Practice.* By J. KINGSTON BARTON, M.R.C.P., Lond.; M.R.C.S, Eng.; J.P. Part II. London: John Bale, Sons & Danielsson, Limited. 1901. Pp. 208.

ALTHOUGH the idea of recording the experiences derived from general practice is a good one, it is not in this case particularly well carried out, and so the present volume is not particularly interesting. An analysis of 100 cases of midwifery shows the use of forceps in 24 cases, a percentage much higher than that of obstetric hospitals, where the element of time is not of much importance, and probably about the usual average of general practitioners. The notes on Drugs and Remedies contain little that is not generally accepted; those on Temperatures err, as so often happens, in advising the temperature of rooms to be kept too high. Indeed, if the thermometer be hung at the head of the bed and not over the mantelpiece, some of the temperatures will be found impossibly high; for example, 66° F. for day and night rooms in bronchitis. Some of the statements of the author are open to question; for example, that "for children hot baths every night are very injurious."

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*Practical Points in Nursing for Nurses in Private Practice.* With an Appendix containing Rules for Feeding the Sick; Recipes for Invalid Foods and Beverages; Weights and Measures; Dose List; and a full Glossary of Medical Terms and Nursing Treatment. By EMILY A. M. STONEY, Graduate of the Training School for Nurses, Lawrence, Massachusetts; late Superintendent, Carney Hospital, South Boston, Massachusetts. Second Edition. Thoroughly Revised. 1900. Illustrated with 73 Engravings and 8 coloured and half-tone plates London: W. B. Saunders & Co.

WITH this book in her travelling case a private nurse will be ready for any emergency, and we heartily congratulate our American sister upon its well-deserved success—a second edition having been called for within a year of its publication. Nothing seems to have been forgotten, and it is difficult to understand how so much instruction can be given in little over 400 pages. As a book of reference, we have not met one to compare with it. The etiquette to be observed towards the doctor and the patient's friends, the preparation of the patient, and the carrying out of instructions, are fully discussed; medical terms are explained, diet charts drawn out, and engravings given where they are required to elucidate the text either in anatomy, position, or bandaging. Exhaustive instruction is given in practical nursing, both of adults and children, and in the care and diet required during convalescence, thirty pages of the Appendix being devoted to sick cookery and tempting dishes for convalescents. District nurses also will find in every chapter valuable hints as to contrivances which bear specially upon their work.

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*The Transactions of the Society of Anæsthetists.* Volume III. London: Published for the Society by the Medical Publishing Company, Ltd. 1900.

THE present volume of the Transactions of this Society is, we think, the best of the series; it contains nine excellent papers. To the general reader the more interesting ones are "The Relationships between Anæsthetics and Insanity," by Dr. Savage; and M. Lloyd's paper on "Respiratory Trouble during an Operation for Empyema."

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*Sidmouth as a Health Resort and Place of Residence.* By A. MACINDOE, M.D., D.P.H. Bristol: John Wright & Co. 1901. Pp. 62.

THIS is one of those too common handbooks chiefly designed to laud the climatic conditions under which the author and his patients dwell,; and it has the usual large amount of sanitary and meteorological information and statistical tables, and even less than the usual small amount of local information of any interest to visitors.

The author deals with the rain falling in 197 days per annum by pointing out that few of these are really wet days, and, as long "as rain stops short of preventing outdoor exercise, its effects are largely beneficial, if too often overlooked."

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*Bath Waters.* A Rational Account of their Nature and Use, with special reference to Gout, Rheumatism, and Rheumatoid Arthritis. By PRESTON KING, M.D., Cantab. Bristol: J. W. Arrowsmith. Pp. 128. N. D. 1901.

IF all the books written on Bath were collected they would fill a large, if somewhat monotonous, library, and in one point they would be found to agree—all begin with King Bladud and end with the recently added baths!

The present book is of the unfortunate and far too prevalent mixed type; part is written for visitors, and part *ought to be* written for medical men. It is copiously and well illustrated—though to credit Rowlandson with a caricature of *seventeenth* century Bath is a little too previous, but, whilst the earlier illustrations deal with old prints, &c., the later are photographs of deformities, &c., treated at Bath, and would better adorn the pages of a medical journal.

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*La Cure Pratique de la Tuberculose.* Par le Dr. P. Pujade. Paris: Georges Carré et C. Naud, Editeurs, 1900. Cr. 8vo. Pp. 369.

This monograph of 369 pages, small octavo, opens with a preface by Dr. Boirac, in which he eloquently tells of the ravages of tuberculosis and the sufferings of the victims of the disease, and finally adopts Montaigne's phrase, "Reader, this is a book, truly." Coming to the book itself, we find an excellent summary of our knowledge of the disease.

The work is divided into two parts. The second part, which contains some 200 pages, deals with the treatment of the disease, which the author considers under three heads—the air cure, rest, and food. We are glad to see that he gives due credit to Dr. Bennet, of Mentone, who, more than thirty years ago, taught that consumptives should live day and night in the open air, and mentions the forced feeding of Debove, who went so far as to feed his patients by a stomach pump. The book is an excellent monograph, clearly written, full of medical history on the subject such as a patriotic Frenchman should write, and very interesting.

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*The Medical Annual.* A Year-book of Treatment and Practitioners' Index. Nineteenth Year. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1901.

This, the nineteenth issue of the *Medical Annual,* has been produced on the lines that made its predecessors so successful. The same care seems to be bestowed in keeping public favour as was shown in securing it. Every advance in medicine as a science is noted and dealt with by specialists. Professor Ruata, of the University of Perugia, Italy, contributes an article on tuberculosis; Dr. M'Intyre, of Glasgow, writes on X-ray work in medicine and surgery; and Mr. Jumer on dental and aural surgery.

The book is beautifully illustrated, and it is difficult to imagine any book of the same size better calculated to reflect the progress of medicine during the year.

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*William Hunter, Anatomist, Physician, Obstetrician.* (1718-1783.) With Notices of his Friends: Cullen, Smellie, Fothergill, and Baillie. By R. HINGSTON FOX, M.D., Brux.; M.R.C.P. Lond. London: H. K. Lewis. 1901.

THE first part of this work formed the oration delivered before the Hunterian Society in London, in 1897; a portion of which appeared in the *Lancet.*

In his introductory note the author tells us that "the work has been a labour of love." And the book confirms the statement, for it has all the charm that such a work gives. It is delightful reading—the past seems to live again for us, and we find ourselves in the company of men whose names have become household words the world over The book is profusely and beautifully illustrated, and we heartily commend it to all who take an interest in the great work done in the eighteenth century by Cullen, Smellie, Fothergill, Baillie, and the brothers John and William Hunter.

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*The Asphyxial Factor in Anæsthesia, and other Essays.* By H. BELLAMY GARDNER, M.R.C.S. Eng.; L.R.C.S. Lond.; Anæsthetist and Instructor in Anæsthesia at Charing Cross Hospital; Assistant-Anæsthetist to the Dental Hospital of London; Late Anæsthetist to the National Orthopædic Hospital, and the Male Lock Hospital of London. London: Baillière, Tindall & Cox. 1901.

THIS booklet is made up of some essays dealing with the question of general anæsthesia, of which the first, entitled "The Asphyxial Factor in Anæsthesia," is a valuable contribution to the subject, by one who has had a large experience in the administration of anæsthetic remedies.

We are particularly pleased with its eminently practical character, and we heartily endorse the teaching of the author.

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*Medico-Surgical Aspects of the Spanish-American War.* By LIEUTENANT-COLONEL DR. NICHOLAS SENN, Chief Surgeon, U. S. Volunteers; Chief of the Operating Staff with the Army in the Field; Professorial Lecturer on Military Surgery, Chicago University. Chicago: American Medical Association Press. 1900.

WE commenced this book anticipating pleasure from the reading of a record and criticism of surgical work from that master of surgery, Nicholas Senn. The very first page disillusioned us. It is regrettable that a gentleman whose reputation is world-wide as a surgeon should "tickle the ears of the groundlings" with the following:—"The first war brought us our liberty and independence; the second established our reputation on the sea; the third taught our Mexican neighbours respect for our country; the fourth saved the Union; and the fifth, which is now being waged, 'was provoked in the cause of humanity.'"

The author grows magniloquent over the "Illinois Army," and showers compliments on one and all of the State Officials, whose photographs—indifferent works of Art—illustrate the letterpress. Following these we have sketches of recruits in dress and undress, accepted ones and rejected ones.

Between pages 24 and 25 there is a photograph of Company B, 7th Regiment of Illinois Volunteers, who, for the display of their physical strength, we suppose, wear only loin cloths. We cannot see anything calling for praise in their appearance; they are men such as might be picked up in any large city. Then comes an illustration of the vaccination of recruits, who are bound for the Caribbean Paradise that the enchantress called from the waves to show to man how beautiful was the dwelling-place of the Gods. The troops rest at Chickamunga, the old battlefield where the great contest of the West took place in 1863, where the Confederate General, Bragg, won his great victory, and lost his reputation by not reaping its fruits. On such a topic the author enlarges with the ardour of his patriotism.

On page 39 we get an account of camp diseases, and it is wonderful what a change we find in Dr. Senn as a medical officer, writing on a subject of which he is a master; to Dr. Senn, the perfervid patriot, illuminating history through glass stained with his imagination.

We have a picture of Miss Wheeler on page 311; she is the daughter of General Wheeler, formerly a Lieutenant-General of Cavalry in the Confederate service; forgetting the sufferings, burying the remembrance of the wrongs done to Southern women, she went from Chickamunga to Cuba to minister to the sick and wounded.

What must General Wheeler's feelings have been as he rode over the battle-field of Chickamunga, in which great victory, as Commander of the Southern Cavalry, he bore so prominent a part?

The volume concludes with a number of short papers on medical subjects, all of which are excellent reading.

The book, however, appears to us not to have a medical flavour. It is a volume apparently written to secure popularity with the masses, and with just enough medical matter to somewhat justify its title. We regret that such a book should have on its title page so honoured a name as that of Senn.

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### GASTRIC SYPHILIS.

M. C. Demel (*Arch. Soc. Méd.*).—A man admitted to hospital for a gastric ulcer died suddenly of hæmorrhage. The following lesions were found on the autopsy:—The hæmorrhage was found to come from a gastric ulcer, which had bled into a sac between the pancreas and the stomach. This burst and flowed into the peritoneum. The gastric ulcer was situated on the posterior wall of the stomach, and on microscopic examination was found to have been caused by a syphilitic gumma. The pancreas was indurated and probably syphilitic, some of the vessels had thrombi, and there were syphilitic cicatrices in the liver. The lumbar ganglia were indurated and caseous.

# PART III.

# MEDICAL MISCELLANY.

## *Reports, Transactions, and Scientific Intelligence.*

### *A New Departure in Medical Statistics in Ireland.*

THE REGISTRAR-GENERAL FOR IRELAND (Mr. Robert E. Matheson, M.A.) has lately introduced a series of most valuable tables into his Quarterly Summary of the Weekly Returns of Births and Deaths in the Dublin Registration Area and in twenty-two of the principal Urban Districts in Ireland.

The new tables will be found on pages 216A, 216B, 216C, and 216D of the Registrar-General's Quarterly Summary for the thirteen weeks ended March 30, 1901. The first of these tables relates to deaths of insured children, the second to still-born children, and the remaining special tables—three in number—to the recent epidemic of cerebro-spinal meningitis in the Dublin Registration Area.

The Registrar-General points out, as regards the deaths of insured children, that—

The Friendly Societies Acts contain provisions limiting the amount of insurance money payable on the death of a child under 5 years of age, to £6, and on the death of a child of 5 and under 10 years of age, to £10.

In the City of Dublin and the Urban Districts of Rathmines and Pembroke during the quarter ended March 30, 1901, the deaths of 866 children under 10 years of age were registered, and in 397 cases, or 45·8 per cent., certificates for insurance purposes were issued.

The Registrar is empowered to grant a Certificate of the Entry of Death in such cases for insurance purposes only on the evidence afforded by—

(1.) A medical certificate of the cause of death,
(2.) A medical certificate of the probable cause of death,
(3.) A coroner's certificate, or
(4.) Other satisfactory evidence.

In 378 out of the 397 deaths of insured children, the certificate of the entry of death was granted on the evidence of a medical certificate of the cause of death; in 2 cases coroner's certificates were received, and in 17 others the certificate was issued on production of "other satisfactory evidence."

From returns furnished for the City of Dublin and the Urban Districts of Rathmines and Pembroke by the Secretary of the Dublin Catholic Cemeteries Committee and the Secretary of Mount Jerome Cemetery for the first quarter of 1901, it appears that 83 interments of still-born children took place during that period. Of these, 75 were from the City of Dublin, 73 being in the Catholic Cemeteries and 2 in Mount Jerome. Six cases were from Rathmines Urban

TABLE C.

| Sexes. | Duration of Illness. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 12 Hours. | Days. | | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 10 |
| Males - | – | - | 2 | 2 | – | 4 | 1 | 2 | – | 2 |
| Females - | 1 | 1 | – | 2 | 4 | 1 | 1 | 1 | 2 | 2 |
| Total, | 1 | 1 | 2 | 4 | 4 | 5 | 2 | 3 | 2 | 4 |

| | Days—*continued.* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11 | 12 | 14 | 16 | 17 | 19 | 22 | 24 | 27 | 29 |
| Males - | 2 | 1 | 3 | – | – | 1 | – | 1 | 1 | – |
| Females - | - | 2 | 3 | 1 | 2 | - | 1 | - | – | – |
| Total, | 2 | 3 | 6 | 1 | 2 | 1 | 1 | 1 | 1 | – |

| | Months. | | | | | | Total. |
|---|---|---|---|---|---|---|---|
| | 1 month and under 2 months. | 2 months and under 3 months. | 3 months and under 4 months. | 4 months and under 6 months. | 6 months. | Unspecified. | |
| Males - | 5 | 3 | – | – | 1 | 7 | 38 |
| Females - | 5 | 1 | 2 | 1 | – | 6 | 39 |
| Total, | 10 | 4 | 2 | 1 | 1 | 13 | 77 |

District, 3 being in the Catholic Cemeteries and 3 in Mount Jerome. Two cases were from Pembroke Urban District, both of which were interred in the Catholic Cemeteries.

The total number of living children whose births were registered in the City of Dublin and the Urban Districts of Rathmines and Pembroke during the quarter was 2,721, which would give a proportion of 3·1 still-births to 100 living children born.

The tables relating to cerebro-spinal meningitis have been compiled from the Registrar's weekly returns.

Table A shows the number of deaths registered from cerebro-spinal meningitis in the Dublin Registration Area, by Registrars' Districts, during each of the quarters (13 weeks) ended December 30, 1899; March 31, June 30, September 29, December 29, 1900; and March 30, 1901. The total number of deaths was 77, 38 of the victims being males and 39 females.

Table B shows the occupation or social condition, by age periods and sexes, of the persons whose deaths were registered as having been caused by cerebro-spinal meningitis in the Dublin Registration Area during the period from October 1, 1899, to March 31, 1901.

We give in full in previous page Table C—showing the number of deaths registered from cerebro-spinal meningitis in the Dublin Registration Area during the period from October 1, 1899, to March 30, 1901, and the duration of illness.

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## DETECTION OF CALCULI BY THE ROENTGEN RAYS.

**Dr. C. L. Leonard** (*Annals of Surgery*) writes that, from the examination of 136 cases suspected of having renal or urethral calculi:—(1) The negative and positive diagnoses by the Roentgen method are accurate and valuable; (2) it is impossible to arrive at an accurate diagnosis of calculus by other methods; (3) by localising the calculus it assists operative measures.

## OINTMENT FOR PILES.

**Sir James Sawyer** gives (*Birmingham Medical Review*, May, 1900) the following formula for an ointment for piles:—Take the whole plant of the celandine (Ranunculus ficaria) gathered when it is blooming in the spring, cut it into small segments and keep it immersed in melted hog's lard, at a temperature of about 100° F., in the proportion of one part by weight of the plant to three parts of lard, for 24 hours. Then squeeze, strain, and allow it to cool and solidify. This use of the plant has long been recognised, as one of its old English names is *pilewort*.

# ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—**Lombe Atthill**, M.D., F.R.C.P.I.
General Secretary—**John B. Story**, M.B., F.R.C.S.I.

## SECTION OF SURGERY.

President—**T. Myles**, President of the Royal College of Surgeons in Ireland.
Sectional Secretary—**John Lentaigne**, F.R.C.S.I.

*Friday, March 1st, 1901.*

The **President** in the Chair.

### *Some Practical Points in the Diagnosis and Operative Treatment of Perforated Gastric Ulcer.*

**Mr. R. C. B. Maunsell** read a paper on above. After a brief review of the work which had been done up to the present, which showed that about 45 per cent. of recoveries might be fairly expected, Mr. Maunsell read notes of four cases which he had operated upon within the preceding twelve months. Three of the cases had been under the care of Dr. J. Lumsden and himself, and one under the care of Dr. E. L'E. Ledwich and himself. Mr. Maunsell then shortly reviewed the diagnosis, and drew special attention to the following points in forming an early diagnosis:—(1) The pain which begins in the epigastrium spreads, but does not shift its position. (2) There is no pain on micturition, which is a frequent sign in peritonitis of the lower abdomen. (3) Thirst is not intense, and there is no flinging about, &c., as in hæmorrhage. (4) There may be no distension in muscular subjects, the tympanites and free gas being shown only by encroachment on the thoracic area. (5) The pulse cannot be relied upon in forming an early diagnosis. (6) The statement sometimes made that a "stomach note" excludes perforation is unwarrantable, as a perforated and collapsed stomach are by no means synonymous terms. (7) Liver dulness is diminished or absent in almost every case. Mr. Maunsell then discussed the operative treatment, and advocated douching, combined with careful sponging, and closure of the abdomen without drainage.

**Mr. Lentaigne** said in a case of his, with an ulcer on the posterior wall, he had failed to find the perforation after the most careful search, and he saw that other operators had met with a like result. Anything which caused delay in the operation added to the patient's danger.

**Mr. M'Ardle**, after congratulating Mr. Maunsell on the brilliant result obtained, said there were some points on which he disagreed with him. One was the method of reaching the stomach with most ease and completeness. He believed Billroth's oblique incision, cutting through both recti, was the best. It afforded a better union after suture, and gave far more room. He agreed that the most perfect method of suturing the abdominal wall was to pass a silk-worm gut suture of sufficient strength through the entire thickness. He held that in a patient whose vitality was already very materially lowered, it was not correct surgery to carry out a prolonged operation. When the perforation had existed for some time it gave the patient a much better chance of life to fix the stomach to the abdominal wall. There were two positions in the stomach in which he would not suture at all—(*a*) where the œsophagus joined it, and (*b*) where a fixed pylorus prevented the procedure being properly carried out. In these cases the abdominal cavity should be tamponed. In dealing with the stomach conservative surgery was the truest surgery.

**Mr. Croly** thought that in extended operations it was the prolonged anæsthesia which caused danger. He was not fond of following anybody's incision, but took the safest route to the point of operation.

**Dr. Parsons** disagreed with Mr. Maunsell's statement that the pulse was no guide. He had found it an exceedingly valuable guide. He had had an opportunity of watching a couple of cases from commencement to termination. One was a young lady, aged twenty-four years, who was suddenly seized with severe pain in the abdomen one morning at 8 o'clock. He saw her at 9 o'clock, when her temperature was normal; at 9 30 her pulse was 100, at 11 o'clock it was 110, at 12 o'clock 120, and in the afternoon 140. Operation was performed, and the stomach stitched to the abdominal wall because the surrounding tissue was so softened it was impossible to close the opening. In the other case the pulse at 9 30 was 90, at 10 30 it was 100, and the patient was rapidly removed to hospital, and when placed on the operating table it was 120. This steady increase in the pulse rate was a most valuable sign, and one not masked by morphin. Other important points were the sudden onset of violent pain (the acuteness of which varied with the amount of food in the stomach at the time) and absence of liver dulness. The temperature was no guide.

The **President** said a few evenings ago a woman, aged twenty-eight years, was admitted to the Whitworth Hospital complaining of abdominal pain. He found her bathed in perspiration. She was vomiting, and was extremely tender to the touch under the ribs on the left side, but the liver dulness had not disappeared. He gathered from the history that perforation had taken place about six hours before. He opened the abdomen by an incision parallel to the lower border of the last rib and found about a pint of tea in the abdominal cavity. There was great difficulty in finding the perforation, which was up under the diaphragm. The tissue around the perforation was rotten, and the sutures cut through as fast as they were put in. He douched the abdominal cavity, and incompletely closed the wound, and she did very well for 24 hours. Then her pulse rate went up, but her temperature did not rise. He opened the wound, and evacuated a large amount of serum, and put in a glass tube, but she succumbed within 48 hours. He was convinced that a great many lives were lost because they tried to do too much—*i.e.*, if they merely tamponed the wound many recoveries would take place. The most favourable time for operation was between six and twelve hours after the accident. The shock of an operation before that, added to the collapse, would probably prove fatal.

**Mr. Maunsell**, in reply, said his point about the pulse was that it was no guide to a surgeon called in to see a case, and who had to decide at once whether he should operate. He would sometimes find the pulse fast, sometimes slow; in a great number of recorded cases he found that the pulse was 68 to 70.

### *Case of Gunshot Wound of Hip-joint.*

The **President** read a paper detailing a case of the above-mentioned injury. Patient was a coastguard officer, about fifty years old; the weapon was a ·450 navy revolver, and the distance about 12 paces. The bullet entered behind near the gluteal fold, and passed into head of femur. Wound healed rapidly, and no trace of bullet could be felt or seen. One exploring incision had been made some time before Mr. Myles saw the case, but the bullet was not found. Later the temperature rose; septic symptoms showed themselves, including cough, with rusty sputum, and patient was evidently sinking when Mr. Myles saw him. On examination patient was a worn-looking man, evidently exhausted by his sufferings; his thigh was flexed at the hip-joint, and held rigidly by his hands; any movement caused great pain. Temperature 104° F.; respiration over 40; and pulse 120. Dr. R. Lane Joynt took a skiagraph, and located bullet in head of femur. An incision parallel to fibres of gluteus max. was made, the sciatic nerve pulled aside, and the hole in the head of femur easily found. This was enlarged with a gouge, and the bullet extracted. The edge of acetabulum was shattered, and some loose fragments of bone were removed. A large drainage tube was inserted, and the wound closed after copious douching. At the time of operation a little finger could be passed through aperture in bone, and it was found that the femoral pulsation could be distinctly felt in front and to one side of the finger so passed. Patient made an uneventful recovery, and is now quite strong, can flex limb, and walk with a barely perceptible limp. Mr. Myles, in his paper, drew attention to the great difference in penetration shown by the ·450 navy revolver and the more modern Mauser or Lee Metford bullet.

The Section then adjourned.

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## SECTION OF MEDICINE.

President—Sir C. J. Nixon, President of the Royal College of Physicians of Ireland.

Sectional Secretary—R. Travers Smith, M.D.

*Friday, March 8, 1901.*

Dr. Walter Smith in the Chair.

### *Exhibits.*

**Dr. A. R. Parsons** exhibited a patient with rhinoscleroma.

### *Note on the Doses of the Arsenium Compounds of the B.P.*

**Dr. Ninian Falkiner** read a paper on this subject. Mr. MacKenna, Clinical Assistant to the Liverpool Skin Hospital, in the table and his interesting remarks which were published on page 85 in the number of the *British Medical Journal* of January 12th, had suggested the investigation of the ratio of the doses of the official compounds of "arsenium" to the percentage amount of arsenium in each compound.

The following table shows in—

Col. 1.—The percentage of arsenium in each compound.

Col. 2.—The approximate strength in As of equal weights of (*a*) $As_4O_6$, (*b*) $Na_2H\,As\,O_4$, (*c*) $Fe_3(As\,O_4)_2 4H_2O$, (*d*) $As\,I_3$.

Col. 3.—The minimum dose of each compound as given in B.P. expressed in decimal parts of a grain.

Col. 4.—The minimum dose that should be given of each compound, calculated from the minimum dose of $As_4O_6$ (as laid down in the B.P. of 1898), on the basis of the percentage of As that the compound contains.

Col. 5.—The number of minims of the official liquors that contain each a minimum dose of the compound as calculated in Col. 4.

| | Col. 1 | Col. 2 | Col. 3 | Col. 4 | Col. 5 |
|---|---|---|---|---|---|
| — | — | — | — | — | 1·6 ♏ Fowler's Solution |
| $As_4\,O_6$ - - | 75·77 | 4·5 | ·016 | ·016 | 1·6 ,, De Valangin's ,, |
| $Na_2H\,As\,O_4$ - | 40·03 | 2·4 | ·025 | ·030 | 3·0 ,, Pearson's ,, |
| $Fe_3(As\,O_4)_2 4H_2O$ | 28·96 | 1·6 | ·062 | ·045 | — |
| $As\,I_3$ - - - | 16·5 | 1·0 | ·052 | ·072 | 7·2 ,, Donovan's ,, |

Two points arise, however, in the consideration of the dosology of the arsenium compounds—1st, the question of solubility; and, 2nd, the relation between the chemical constitution of a compound and its pharmacological activity. The first point may arise with reference to the dose of $Fe_3\,(As\,O_4)_2,4H_2O$, but the second point does not appear to have influenced the calculation of the dose of $Na_2H\,As\,O_4$, as its dose is less than it ought to be, if calculated on its percentage of arsenium, while, according to the view that unsaturated compounds are more physiologically active than saturated, the arsenious compounds should be more active than the arsenic. The tables bring out the fact strikingly that weight for weight $As_4O_6$ is about 4½ times as strong as $As\,I_3$ in the quantity of As that it contains, which may account for the tolerance which has been observed by Mr. MacKenna and other practitioners in the use of Donovan's solution. It may be observed that his cases 1, 5–7, 11, 12, 13, 14, and 25, in taking ·409 grains ($As\,I_3$) daily, were taking about the equivalent of ·09 grains ($As_4O_6$).

**Dr. Walter Smith** observed that there was a great gap, in the case of arsenic, between its reputed medicinal uses and its known physiological action, as was also the case with respect to mercury. Amongst skin diseases remarkably influenced by arsenic (and he admitted that its use was empirical) he would put at the head of the list pemphigus, then that most dressing complaint, lichen planus; and in the third and last place he would put psoriasis. He directed attention to the curious contrast that there was in their knowledge of the physiological action of inorganic bodies as a group as compared with organic. Organic chemistry had made such brilliant advances of late as to put inorganic chemistry completely in the background. At present he did not see any correlation between atomic weights and physiological action. Arsenic belonged to a well-defined group of elements—namely, the pentads—which started with nitrogen. Taking the members of this group, there were very interesting physiological alliances between them, not only in their acute toxic effect, but also when given in small medicinal doses and in chronic poisoning. They all act as poisons to the central nervous system, cause fatty degeneration of the organs, and have a remarkable stimulating effect in promoting the growth of connective tissue, especially of bone, hence the osteogenetic effect of phosphorus and arsenic, and their use in rickets. Referring to chronic arsenical poisoning, he had often given $\frac{1}{30}$ gr. of white arsenic per diem, which came to 2 grs. per month, or 20 to 30 grs. in a year; yet he had never produced chronic poisoning after using it for months. Dr. Falkiner had under-estimated the amount when he mentioned $\frac{1}{4}$ gr. per gallon as found in beer in England, for up to 1 gr. per gallon had been found. He believed that, with regard to arsenic, iron, or mercury, it was all the same what compound they employed provided they took into account simple facts such as solubility, local irritation, absorbability, and soforth.

Sir George Duffey said that Dr. Falkiner's calculation was based solely on the element arsenium, but it was recognised, he thought, by most pharmacologists that arsenious acid and its salts were much more poisonous than arsenic acid and its salts. The point he wished to lay stress on was that the element, arsenium, was not to be taken so much into account as the nature of the salt employed.

Dr. Travers Smith spoke.

Dr. Croly referred to a preparation he was familiar with, called Neligan's solution, which was a solution of arsenic, iodine, and iodide of potassium. It was useful in certain cases where Donovan's solution, on account of the mercury in it, was undesirable. He had given it a long trial, and he remembered inveterate cases of psoriasis that had been cured by it.

Dr. Craig said he was accustomed to give large doses of arsenic in three affections—first, in pernicious anæmia; secondly, in leucocythæmia and allied affections; and thirdly, in nervous affections, more particularly chorea. He referred to a wonderful cure of a case of pernicious anæmia which he reported some years ago by 15-minim doses of Fowler's solution thrice daily. The patient presented himself a couple of months ago suffering from bronchitis, and he had taken large quantities of arsenic during all that time, having got the prescription made up regularly at the chemists. He had never seen any evil results from its use in children with chorea, and he had no faith in small doses. In a case of leucocythæmia, which he had treated with 15-minim doses of Fowler's solution thrice daily, the spleen got small, to become enlarged again the following year. The man eventually died of general tuberculosis, which struck him as a peculiar termination, inasmuch as arsenic had been advocated in phthisis, as well as in chronic rheumatic arthritis, on account of a supposed germicidal action.

The Section then adjourned.

## SECTION OF OBSTETRICS.

President—A. V. Macan, M.B.
Sectional Secretary—John H. Glenn, M.D.

*Friday, March 15, 1901.*

The President in the Chair.

### *Exhibit.*

**Dr. Alfred Smith** showed a large hydrosalpinx which he removed from a patient, aged thirty-eight, who had been operated upon eight years ago for sterility (dilatation, with curettage). Septic trouble followed, and the patient was an invalid for months. Subsequently persistent pain and menstrual irregularities set in. The hydrosalpinx was relaxed, and had been overlooked by experts. Recovery.

**Dr. Smyly** said he had sometimes been surprised on opening an abdomen to find a distended tube which he had not felt. When the tube wall was soft it was not distinct from the intestine very often.

**Dr. Purefoy** said he had under observation some years ago a woman with a cystic swelling at left side of the uterus. He contemplated removing it, but one morning she had a considerable escape of watery fluid, and the cyst disappeared. He regarded it as a case of hydrosalpinx.

**Dr. Macan** said he did not see the ovary very distinctly, and the specimen might be one of tubo-ovarian cyst. He did not agree hat there should be much difficulty in these cases. On bimanual examination one should be able to palpate anything in the region of the tubes.

### *Discussion on Rotunda Hospital Report.*

Dr. W. J. Smyly congratulated the Master of the Rotunda and his assistants upon the excellence of their Report, which was creditable, not only on account of the brilliant results obtained, but also for the manner in which the work had been recorded. He, however, deplored the classification of abortions as preventable and inevitable, for no human being could tell whether a case belonged to one or other group until it was too late to be of any use, and the absurdity of this classification was demonstrated in this Report by the statement that out of a large number of abortions which actually occurred only eight were inevitable. He further objected to the term "induction of abortion" being applied to cases in which sea-tangle tents and tampons were introduced on account of hæmorrhage. In such cases the ovum was already partly detached, and this measure only accelerated a process already begun. Induction of abortion was a very serious procedure, only to be undertaken on the most serious grounds, and after consultation. As regarded myomata in pregnancy and labour, they seldom gave rise to trouble. In one case, however, he had great difficulty in extracting the child; in another he had performed panhysterectomy, with a favourable result to both mother and child; and in a third case the patient died from *post-partum* hæmorrhage, due to a sub-mucous myoma. After delivery he had in a few cases seen retention of the membranes, and in two of these severe sapræmic intoxication. With regard to rupture of the uterus, he had had good results with iodoform gauze drainage, and bad from operative measures, but in a paper recently published by Dr. Klein, of Dresden, with a careful analysis of 381 cases, it appeared that the results were about the same, the mortality after operation being 44 per cent., whilst in those drained, tamponed, or douched, it was 39 per cent. There was also little difference between those cases in which a primary cœliotomy was performed and those in which it was performed secondarily, after the delivery of the fœtus, the mortality following the former being 44 per cent., after the latter, 46 per cent. The results were influenced much more by the time that elapsed after rupture before the operation was performed, and whether the patient was in the meantime removed to hospital. The mortality in cases operated upon within two hours was only 30 per cent.; later than that, 48 per cent.; half a day or more, 72 per cent. Of cases operated upon either at home or in hospital within two hours, and without transport, the mortality was 16 per cent.; operation, under similar conditions, later than two hours, 42 per cent.; patients operated upon within two hours after transport, 37 per cent. Of cases treated without operation, washing out only, mortality 45 per cent.; drainage with rubber tubes, 17 per cent.; with gauze, 52 per cent. Plugging with gauze gave rather better results. The bad results from gauze drainage he attributed to hæmorrhage; therefore, he says away with the gauze. His conclusion is that in cases of severe hæmorrhage early operation is indicated; in all others, drainage with a rubber tube. The operation should be performed wherever the accident occurred, and the patient should not be transferred to a hospital.

**Dr. Jellett** said there was a great deal to be said on the question of terminology in all the different forms of hæmorrhage. This was forcibly exemplified in the Report by the number of additional cases of accidental hæmorrhage and of placenta prævia brought in by incorrect terminology. In last year's Report there were altogether 84 cases, but this year they amounted to 167, 116 being *post-partum* hæmorrhage, as against 43 for last year. In the table of cases of contracted pelvis, in a considerable number labour came on at 5½, 6½, and 7 months; but, except in three cases, there was no mention of what brought on labour. There was a great want of commingling of statistics from the various maternity hospitals in Dublin to enable practical data to be drawn from cases. As to uterine myomata, Dr. Horne had some cases occurring in situations where one would think they rendered delivery impossible, yet they slipped up, and delivery was normal.

**Dr. Lane** said the curette seemed to have been used more frequently in cases of abortion than formerly. Of the 258 extern cases 126 were curetted, but the 43 intern cases of incomplete abortion were all curetted. He was anxious to know why the curette was so freely used since they were all aware that the uterus was not in the best condition for curetting after abortion.

**Dr. Smith** said case No. 1 in the Extern Maternity conveyed no information to him. He would expect a microscopic examination in such a case. In a case of contracted pelvis the child was born alive at 5½ months. Why was labour induced in that case, especially as, with a worse pelvis, a child was born alive at 9½ months? He had the same objection as Dr. Smyly to the term mixed accidental hæmorrhage. He knew many cases of fibroid tumours occurring in pregnancy, and which gave no trouble. He could recollect only one case in which it was necessary to put on forceps to push the tumour out of the way.

**Dr. Glenn** thought the Report could be very greatly improved. It was full of both typographical and grammatical errors. The cases generally were very incomplete. In case 3, page 1, they did not mention how far the patient had gone in pregnancy. Case 4, page 2, was most interesting, but there was no diagnosis. In several cases there was no mention of the fœtal heart. In Table IV. there was mention of 13 cases of version—there were several kinds of version, and all through the Report he had looked to see if there was any attempt first made of external version, but could see none. He noticed they had gone back to the old term, "transverse," instead of "oblique" presentation. As to the remarks of previous speakers on the cases of contracted pelvis, he believed, speaking from personal experience, that it took the assistants a considerable time to become adept in the use of Skutsch's pelvimeter, and, meantime, their measurements were not above reproach. In the Table of Contracted Pelvis there were a great many blanks. This should not be, and certainly would not be found in any German report. In a case of eclampsia the urine was stated to be "loaded with albumen." The actual amount should have been measured and noted. In a case of scarlatiniform erythema it was not stated whether the morphin might not have caused it. There was no record kept of the amount of blood lost in cases of accidental hæmorrhage, placenta prævia, or *post-partum* hæmorrhage. This should be done by weighing diapers and sheets in the hospital. Again it was stated "three patients who had no hæmorrhage on the couch lost a considerable amount on being put to bed." His explanation of that was the fussiness of sisters and lady superintendents in their anxiety to have the labour ward ready for the next case. He thought it would be a great improvement if, as in the London hospitals, the report was entrusted to a medical or surgical registrar accustomed to the work year after year. Such a man would produce a more scientific report, and could also do some original work, which was badly wanted in Dublin, where a large amount of valuable material was wasted. What Assistant had ever investigated the bacteriology of the vagina? Not one, because there was no proper laboratory, and both the Master and Assistants had too much other work to perform. He made these remarks in no cavilling spirit, but with the best interests of the hospital at heart.

The **President** said the information given by Dr. Smyly as to the treatment of ruptured uterus was most valuable and interesting. The idea he (Dr. Macan) had was that in all cases where the child had gone into the abdomen the operation by abdominal section should be performed. It was easy to say that in a clinique, but men in practice wanted to know an alternative treatment. Drainage was within the reach of every man in the country, and if it were confirmed by further observations that it gave a smaller mortality it would be an enormous improvement. In case 1, page 14, of hysterectomy and ruptured uterus, the woman got a ruptured uterus when apparently only about 7 hours in labour. That was very exceptional. He thought fibromata had not very much effect on labour, and how far they interfered with conception was questionable. Their position was more important than their size, all tumours above the contraction ring going up exactly as the bladder was pulled up. As to the occurrence of hæmorrhage when the placenta was inserted on the portion corresponding to a fibrous tumour, he thought it was impossible for that portion of the uterine wall to contract, and, therefore, the vessels should remain open, and lead to *post-partum* hæmorrhage. He agreed with Dr. Glenn that the Report contained some extraordinary mistakes. It seemed to be the routine treatment to curette all cases where the temperature went up in the puerperal state, but he did not think it right. He thought 29 cases of manual removal of the placenta a large number. There seemed to be a great many cases of *post-partum* hæmorrhage. It was stated that "some cases of secondary *post-partum* hæmorrhage were due to retained membranes, and yielded to suitable treatment." It was many years since he (Dr. Macan) came to the conclusion that retained membranes could not cause hæmorrhage. In cases of badly contracted uterus both hæmorrhage and retention of membranes occurred, and in removing the latter the insertion of the hand made the uterus contract, and stopped the hæmorrhage. As to the case of Cæsarean section, the woman was supposed to be 1½ months from the end of her pregnancy, and it was possible for the child to go through at full term. He would say the brow presented because it was a flattened pelvis and the head was going through by the ordinary mechanism. It seemed to him that Cæsarean section in a first case under these conditions required some justification. There was no correspondence between the different stages of morbidity—the first was from 98·6° to 100·8° = 2·2°; the second from 100·8° to 101·2° = ·4°, yet it was made into a whole class; the third from 101·2° to 102·2° = 1°; and the fourth, 102·2° to 104° = 1·8°.

The Section then adjourned.

# SANITARY AND METEOROLOGICAL NOTES.

Compiled by Sir J. W. Moore, B.A., M.D. Univ. Dubl.;
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## Vital Statistics

*For four weeks ending Saturday, May* 18, 1901.

## IRELAND.

### Twenty-three Town Districts.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending May 18, 1901, in the Dublin registration area and the twenty-two principal provincial urban districts of Ireland was 23·2 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,058,722. The deaths registered in each of the four weeks ended Saturday, May 18, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000:—

| Towns, &c. | Week ending April 27 | May 4 | May 11 | May 18 | Average Rate for 4 weeks | Towns, &c. | Week ending April 27 | May 4 | May 11 | May 18 | Average Rate for 4 weeks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 Town Districts | 25·1 | 23·3 | 22·6 | 23·2 | 23·6 | Limerick - | 29·5 | 19·6 | 21·1 | 47·7 | 29·5 |
| Armagh - | 42·8 | 35·6 | 7.1 | 7·1 | 23·2 | Lisburn - | 12·8 | 17·0 | 12·8 | 8·5 | 12·8 |
| Ballymena | 16·9 | 5·6 | 11·3 | 16·9 | 12·7 | Londonderry | 22·0 | 29·8 | 20·4 | 12·6 | 21·2 |
| Belfast - | 20·9 | 21·8 | 20·5 | 21·2 | 21·1 | Lurgan - | 31·9 | 13·7 | 4·6 | 18·2 | 17·1 |
| Carrickfergus | 23·4 | 0·0 | 11·7 | 23·4 | 14·6 | Newry - | 16·1 | 4·0 | 8·1 | 24·1 | 13·1 |
| Clonmel - | 14·6 | 29·2 | 9·7 | 0·0 | 13·4 | Newtownards | 45·4 | 5·7 | 39·7 | 17·0 | 27·0 |
| Cork - | 25·6 | 23·5 | 22·1 | 17·3 | 22·1 | Portadown - | 37·1 | 37·1 | 24·7 | 30·9 | 32·5 |
| Drogheda - | 11·4 | 22·8 | 19·0 | 26·6 | 20·0 | Queenstown | 17·2 | 5·7 | 5·7 | 5·7 | 8·6 |
| Dublin (Reg. Area) - | 29·4 | 26·5 | 27·4 | 27·4 | 27·7 | Sligo - | 40·6 | 15·2 | 0·0 | 10·2 | 16·5 |
| Dundalk - | 20·9 | 12·6 | 16·8 | 37·7 | 22·0 | Tralee - | 39·2 | 50·4 | 39·2 | 22·4 | 37·8 |
| Galway - | 34·0 | 30·2 | 64·2 | 18·9 | 36·8 | Waterford - | 13·9 | 21·9 | 19·9 | 27·9 | 20·9 |
| Kilkenny - | 28·3 | 18·9 | 9·4 | 18·9 | 18·9 | Wexford - | 27·1 | 40·6 | 31·6 | 13·5 | 28·2 |

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases registered in the 23 districts during the week ended Saturday, May 18, were equal to an annual rate of 1·8 per 1,000—the rates varying from 0·0 in eighteen of the districts to 6·2 in Portadown. Among the 146 deaths from all causes registered in Belfast are 1 from small-pox, 6 from measles, 5 from whooping-cough, 2 from diphtheria, 6 from enteric fever, and 3 from diarrhœa.

## DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown.

In the Dublin Registration Area the births registered during the week ended Saturday, May 18, amounted to 178—81 boys and 97 girls; and the deaths to 187—98 males and 89 females.

### DEATHS.

The deaths, which are 11 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·2 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the area, the rate was 27·4 per 1,000. During the twenty weeks ended Saturday, May 18, the death-rate averaged 33·6, and was 2·4 over the mean rate for the corresponding portions of the 10 years 1891–1900.

There were 16 deaths from zymotic diseases registered during the week ended May 18. This figure is below the average for the corresponding period of the past 10 years by 3. Whooping-cough caused 8 deaths; enteric fever, diarrhœa, erysipelas, influenza, and puerperal fever each caused one death.

Tubercular disease caused 44 deaths—30 from pulmonary tuberculosis, 5 from tabes mesenterica, 4 from tubercular meningitis, and 5 from scrofula.

Diseases of the respiratory system caused 37 deaths. This number is 6 in excess of the average for the corresponding period of the past 10 years. Bronchitis caused 22 deaths and pneumonia 15 deaths. There were 17 deaths from diseases of the circulatory system.

Six deaths were registered as being caused by convulsions; of these 3 were under one month in age and 3 were over one month but under one year.

There were 5 deaths from apoplexy and 11 deaths from other diseases of the brain and nervous system (exclusive of convulsions).

Cancer caused 5 deaths.

Nine deaths from violence were registered, 8 being the result of accident.

In 9 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the deaths of 6 children under five years of age (including 5 infants under one year old) and the deaths of 3 persons aged 60 years and upwards.

Forty-seven of the persons whose deaths were registered during the week were under 5 years of age (30 being infants under one year, of whom 11 were under one month old) and 48 were aged 60 years and upwards, including 19 persons aged 70 and upwards, of whom 8 were octogenarians, and 1 (a woman) was stated to have been aged 91 years.

## STATE OF INFECTIOUS DISEASE IN DUBLIN.

### (1.) Cases of Infectious Diseases Notified to the Public Health Committee of the Corporation.

Sir Charles Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of Infectious Diseases in the City of Dublin, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | | |
|---|---|---|---|
| Week ending April 27, 1901 | ... | ... | 54 cases. |
| " May 4, " | ... | ... | 60 cases. |
| " May 11, " | ... | ... | 49 cases. |
| " May 18, " | ... | ... | 66 cases. |

Of the 66 cases notified in the week ended May 18, 21 were erysipelas, 15 enteric fever, 8 scarlatina, 6 measles, 3 German measles, 6 continued fever, 6 diphtheria, and one puerperal fever.

### (2.) Cases of Infectious Diseases in Rathmines Urban District.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | | |
|---|---|---|---|
| Week ending April 27, 1901 | ... | ... | 5 cases. |
| " May 4, " | ... | ... | 6 cases. |
| " May 11, " | ... | ... | 2 cases. |
| " May 18, " | ... | ... | 2 cases. |

Of the 2 cases notified in the last week, one was diphtheria, and one enteric fever.

### (3.) CASES OF INFECTIOUS DISEASES IN PEMBROKE URBAN DISTRICT.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Pembroke, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | |
|---|---|
| Week ending April 27, 1901 | 20 cases. |
| „ May 4, „ | 7 cases. |
| „ May 11, „ | 8 cases. |
| „ May 18, „ | 5 cases. |

Of the 5 cases notified in the last week, one was measles, 2 were whooping-cough, one enteric fever, and one erysipelas.

### (4.) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Five cases of enteric fever were admitted to hospital during the week ended Saturday, May 18, 8 cases were discharged, and 35 cases remained under treatment at the close of the week.

Six cases of diphtheria were admitted to hospital, 4 cases were discharged, and 12 cases remained under treatment at the close of the week.

Seventeen cases of scarlatina were admitted to hospital, 12 cases were discharged, and 75 cases remained under treatment at the close of the week. This number is exclusive of 15 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Eight cases of measles were admitted to hospital, 9 cases were discharged, and 21 cases remained under treatment at the close of the week.

In addition to the above-named zymotic diseases recognised as such, 11 cases of pneumonia were admitted to hospital, 7 cases were discharged, 3 deaths occurred, and 42 cases remained under treatment at the close of the week.

## STATE OF INFECTIOUS DISEASE IN BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | |
|---|---|---|
| Week ending April 27, 1901 | ... | ... 57 cases. |
| " May 4, " | ... | ... 63 cases. |
| " May 11, " | ... | ... 74 cases. |
| " May 18, " | ... | ... 106 cases. |

Of the 106 cases notified in the last week, one was small-pox, 6 scarlet fever, 53 enteric fever, 7 erysipelas, 6 diphtheria, 27 continued fever, 2 typhus fever, 2 membranous croup, and 2 puerperal fever.

## ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, May 18, in thirty-three large English towns, including London (in which the rate was 15·8), was equal to an average annual death-rate of 16·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·2 per 1,000, the rate for Glasgow being 21·2, and for Edinburgh 19·5.

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## METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat.* 53° 20′ *N., Long.* 6° 15′ *W., for the Month of May,* 1901.

| | |
|---|---|
| Mean Height of Barometer, - - - | 30·100 inches. |
| Maximal Height of Barometer (23rd, at 9 a.m.), | 30·482 " |
| Minimal Height of Barometer (7th, at 9 a.m.), | 29·203 " |
| Mean Dry-bulb Temperature, - - | 53·4°. |
| Mean Wet-bulb Temperature, - - | 49·5°. |
| Mean Dew-point Temperature, - - | 45·7°. |
| Mean Elastic Force (Tension) of Aqueous Vapour, | ·308 inch. |
| Mean Humidity, - - - - | 75·6 per cent. |
| Highest Temperature in Shade (on 31st), - | 66·7°. |
| Lowest Temperature in Shade (on 12th), - | 39·1°. |
| Lowest Temperature on Grass (Radiation) (12th), | 34·0°. |
| Mean Amount of Cloud, - - - | 33·1 per cent. |
| Rainfall (on 9 days), - - - | 1·204 inches. |
| Greatest Daily Rainfall (on 27th), - - | ·250 inch. |
| General Directions of Wind, - - - | N.E., E. |

### *Remarks.*

May, 1901, may be described as a delightful month—bright, dry, and seasonably warm. As usual, N.E. and E. winds prevailed, and as the atmosphere was dry the diurnal range of temperature was large—namely, 15·8° on the average. Sunny, warm days were followed by calm, cold nights. The amount of bright sunshine was roughly estimated at no less than 302¼ hours, or a daily mean of 9¾ hours. The percentage amount of cloud was only 33·1. Except from the 5th to the 10th and from the 26th to the 30th, the weather was rainless. At the dates mentioned, rain fell copiously. In the former rainy spell, hail, thunder and lightning occurred—in the latter, only a genial rain fell. Absolute drought held from the 11th to the 25th, inclusive.

In Dublin the arithmetical mean temperature (53·6°) was above the average (52·0°). The mean dry-bulb readings at 9 a.m and 9 p.m. were 53·4°. In the thirty-six years ending with 1900, May was coldest in 1869 (M. T.=48·2°), and warmest in 1893 (M. T.=56·7°). In 1900 the M. T. was 52·5°.

The mean height of the barometer was 30·100 inches, or 0·111 inch above the corrected average value for May—namely, 29·989 inches. The mercury rose to 30·482 inches at 9 a.m. of the 23rd, and fell to 29·203 inches at 9 a.m. of the 7th. The observed range of atmospheric pressure was, therefore, 1·279 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 53·4°, or 6·1° above the value for April, 1901, 47·3$^{c}$. Using the formula, *Mean Temp.*= *Min.* + (*Max.* — *Min.* × ·47), the value is 53·1°, or 1·5° above the average mean temperature for May, calculated in the same way, in the twenty-five years, 1865–89, inclusive (51·6°). The arithmetical mean of the maximal and minimal readings was 53·6°, compared with a twenty-five years' average of 52·0°. On the 31st the thermometer in the screen rose to 66·7°—wind, S.S.W.; on the 12th the temperature fell to 39·1°—wind, E. The minimum on the grass was 34·0°, also on the 12th.

The rainfall amounted to 1·204 inches, distributed over 9 days. The average rainfall for May in the twenty-five years, 1865–1889, inclusive, was 2·030 inches, and the average number of rainy days was 15·4. The rainfall and the rainy days were thus much below the average. In 1886 the rainfall in May was very large—5·472 inches on 21 days; in 1869, also, 5·414 inches fell on 19 days. On the other hand, in 1895, only ·177 inch was measured on but 3 days. In 1896 the fall was only ·190 on 7 days. In 1900, 1·919 inches fell on 13 days.

A solar halo appeared on the 12th. High winds were noted on 6 days, but attained the force of a gale on only one occasion—the 31st. The atmosphere was slightly foggy on the 1st. Hail fell on the 5th and 7th. Thunder and lightning occurred on the 5th, and thunder was also heard on the 7th.

During the month the thermometer did not fall below 32° in the screen or on the grass. The mean minimal temperature on the grass was 41·7°, compared with 41·6° in 1900, 40·6 in 1899, 42·9 in 1898, 40·9° in 1897, 43·1° in 1896, 41·8° in 1895, 37·6° in 1894, 45·6° in 1893, and 41·3° in 1892. The maximum reached or exceeded 60° on 22 days, but never fell short of 50°.

The rainfall in Dublin during the five months ended May 31st amounted to 7·724 inches on 67 days, compared with 9·921 inches on 92 days in 1900, 9·652 inches on 87 days in 1899, 10·568 inches on 84 days in 1898, 10·693 inches on 93 days in 1897, 5·971 inches on 70 days in 1896, 10·410 inches on 68 days in 1895, 12·709 inches on 90 days in 1894, 7·908 inches on 66 days in 1893, 10·099 inches on 80 days in 1892, and a twenty-five years' average of 10·496 inches on 81·6 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 1·145 inches distributed over 9 days—·375 inch falling on the 30th, and ·330 inch on the 7th. The total fall since January 1st, 1901, equals 11·205 inches on 65 days, compared with 16·381 inches on 84 days in 1900, 15·475 inches on 86 days in 1899, 12·445 inches on 78 days in 1898, 14·120 inches on 90 days in 1897, 5·716 inches on 52 days in 1896, 12·845 inches on 58 days in 1895, 15·696 inches on 85 days in 1894, and 9·565 inches on 65 days in 1893.

At Recess Hotel, Connemara, Co. Galway, the rainfall amounted to 2·110 inches on 7 days. The maximum fall in 24 hours was ·480 on the 30th. The month was beautifully fine, and the rainfall was 2·513 inches less than that for May, 1900, when 4·623 inches fell on 16 days.

Dr. B. H. Steede reports a rainfall of only ·638 inch on 8 days at the National Hospital for Consumption, Newcastle, County Wicklow. The maximum fall in 24 hours was ·332 inch on the 30th. The highest shade temperature during May was 62·8° on the 15th, the lowest was 38·2° on the 12th.

Dr. Arthur S. Goff returns the rainfall at Lynton, Dundrum, Co. Dublin, as 1·09 inches on 10 days, the greatest daily measurement being ·25 inch on the 30th. Thunder was heard on the 5th. The temperature in the shade ranged from 67° on the 31st to 39° on the 2nd and 12th. The mean temperature of the month was 52·6°.

The rainfall at Cloneevin, Killiney, was 1·20 inches on 10 days—·35 inch being measured on the 7th. The average rainfall in May at this station during the 16 years, 1885–1900, inclusive, was 2·080 inches on 13·4 days. Since January 1st, 1901, 8·82 inches of rain have fallen at Cloneevin on 69 days. This compares with a 15 years' average of 9·782 inches on 71·7 days.

# PERISCOPE.

## TRIFACIAL NEURALGIA.

At a recent meeting of the *Société des Sciences Médicales* M. Gauthier presented a patient from whom M. Jaboulay had excised the superior cervical ganglion of the sympathetic nerve for the relief of severe trifacial neuralgia, of four years' standing. The patient was sixty-three years old, and a sufferer from chronic neuralgia for many years. He had had all the molar teeth of the left side extracted, the side affected, with little relief to his suffering, which became so bad that he could not eat, and in consequence lost flesh rapidly. More than once he seriously contemplated suicide. M. Jaboulay operated on the 14th of October, 1900. During the two following months but little improvement was noticeable. In time, however, the pain diminished, and by the 1st of January, 1901, it had completely left. He now became able to masticate his food, and gained flesh; still there remained pain on pressure over the points of exit of the nerves on the cutaneous surface of the face. At the end of six months there was noticeable on the left side a slight lessening of the palpebral chink, a depression of the eye, and a slight flaccidity of the cheek, and a shade more colour than on the opposite cheek. As M. Jaboulay has noticed in his book, *Chirurgie du Sympathetique*, pain gradually and slowly disappears in such cases on section of the sympathetic, relief seldom being obtained until after the fifteenth day after operation. This fact goes to confirm the theory that the operation gives freedom from pain by producing degeneration of the trifacial nerve of the side operated on.

## HERMOPHENYL.

This new antiseptic is chemically described as a mercuro-phenodisulphonate of sodium; it is an organo-metallic compound, produced by M. Lumière, of Lyons—(1) It occurs as a white amorphous powder, very soluble in water, and in this medium the reactions of the mercury are marked. (2) It has well-marked toxic properties—4 c.c. a kilo, intravenously injected into a dog or rabbit, or 12 c.c. hypodermically injected into a guinea-pig, produce symptoms of poisoning. (3) It is a powerful vegetable and animal parasiticide. A short period of contact with a 1 in 100 solution is sufficient to destroy such pathogenic forms as the *Bacillus coli*, *B.* of Eberth, *Staphyloccus*, *Bacillus subtilis* and the *B. pyocyaneus.*

A solution one-tenth this strength produced the same effect, but required a longer time to produce it. (4) Solutions of 1 in 500 injected into the muscle tissue, or even hypodermically, are quickly absorbed, and produce no permanent hardening of the tissues, nor abscess. These injections produce but little pain, not nearly so much as the ordinary mercurial ones. (5) Hermophenyl does not irritate the skin or mucous surfaces. A four per centum solution did not irritate the palpebral conjunctiva. (6) The salt is eliminated rapidly by the kidneys. Hermophenyl seems well suited for both internal use and for external application in surgery. Already a 1 in 500 solution is being used as a douche for the ophthalmia of the newly-born.

### THE SOCIETY OF MEDICAL PHONOGRAPHERS.

This society will hold its next annual shorthand examination early in May, 1902. Two prizes will be offered, each of the value of £5, one for first-year's students and one for students of more than one year's standing. The competition will be open without entrance fee to any registered medical student in the United Kingdom who has not taken a first prize at one of the Society's previous examinations. It will be held simultaneously in London, Edinburgh, Dublin, and at any provincial medical centre in the United Kingdom at which not fewer than three candidates shall offer themselves. Intending candidates should send in their names as early as possible to Dr. P. G. Griffith, Bonhams, Hayward's Heath, Sussex, who will furnish them in return with a detailed prospectus of the examination. The latest date for receiving entries will be April 15, 1902.

### LITERARY NOTE.

A new series of articles, dealing with the practical side of microscopy, together with notes and queries, correspondence, and description of new apparatus, are appearing each month in *Knowledge*, under the editorship of M. I. Cross (joint author of the well-known handbook, "Modern Microscopy"). The articles give good and practical information on the subject, and being ably edited, should prove interesting to the medical profession.

### PAIN IN TYPHOID FEVER.

From a study of 62 cases of typhoid Dr. Thomas M'Crae (*N.Y. Med. Jour.*) concludes:—(1) About two-fifths of the patients are free from pain or tenderness, rather less than one-fifth have tenderness only, and pain is present at some time in about two-fifths of the cases. (2) Pain due to some condition other than the specific bowel lesion was present in about 14 per cent. of all cases. (3) Pain occurred with hæmorrhage or perforation in about 5 per cent. of all cases. (4) Pain was most constantly present with perforation, when it was usually sudden in onset, severe in character, and paroxysmal in occurrence. (5) In about two-fifths of all cases with pain during the course no cause could be found.

### THE PNEUMATIC SINUSES IN THE SPHENOIDAL WINGS.

DR. BEAMAN DOUGLASS, of New York, writing in the *Laryngoscope* for February, 1901, shows how the above sinuses have not been completely described by the two great authorities on this subject—Hajck and Zuckerkandl. Their teaching only went as far as dividing the sphenoidal cavity proper from the posterior ethmoidal cells, but omitted the air space often found in the lesser wing of the sphenoid bone. His results are, briefly, that the sphenoidal cavity may occupy the body of the bone alone or may invade the lesser wing, partially or completely. In the cases where the true sphenoidal cavity does not invade the lesser wing there may be a separate cavity opening into the posterior ethmoidal cells or direct into the recessus spheno-ethmoidalis, or the posterior ethmoidal cells may extend backwards into the lesser wing. The author points out how important a correct knowledge of these facts is when operating for the various empyemata of these cells, and how the accepted measurements for safety in curetting may be exceeded without necessarily entering the cranial cavity; also that suppuration may continue after the other cavities have been opened up, due to this condition.

### BOYS WISHING TO GO TO SEA.

THE Committee of the *Arethusa* and *Chichester* Training Ships, Greenhithe, Kent, under date 24th June, 1901, state that there are vacancies on board these ships for poor boys of good character who wish to go to sea. The vacancies arise because so many lads have recently been sent into the Royal Navy and Mercantile Marine. Mission workers, school teachers, and all others interested in the welfare of these boys, may be thankful to hear of such openings for aspiring young sailors of good character. The ages should be between 14 and 16, and applications may be sent addressed to the Secretary, Mr. H. Bristow Wallen, 164 Shaftesbury-avenue, London, W.C., at which address also he interviews candidates every morning at 11 o'clock. Forms of application and full particulars will be gladly forwarded to any part of the United Kingdom. All suitable cases are admitted at once without votes.

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# PART I.

## ORIGINAL COMMUNICATIONS.

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### ART. III.—*Some Surgical Lessons from the Campaign in South Africa.*[a] By SIR WILLIAM THOMSON, C.B., M.D., F.R.C.S.; Honorary Surgeon to His Majesty the King in Ireland; Surgeon to His Excellency the Lord Lieutenant, K.G.; and to the Richmond Hospital, Dublin.

THE request of the Council of the Association that I should undertake the duty of delivering the Address in Surgery at this meeting confers upon me a great honour, which I fully appreciate, and for which I hasten to express my cordial acknowledgments. But it also brings with it a responsibility so heavy that I am filled with anxiety. It is a difficult thing to follow, even at a long interval, the distinguished men who have preceded me in this high office. I remember, too, that but a few years ago my old teacher and colleague, Sir William Stokes, occupied this position, and captivated his audience by a vivid eloquence which was all his own. To-day we have to speak of him as one of the many who, going out in the service of their country, have paid the immortal tribute of their patriotism in South Africa, and, like tired children, have lain down "to take their fill of deep and liquid rest."

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[a] Being the Address in Surgery delivered at the Annual Meeting of the British Medical Association at Cheltenham, July-August, 1901.

In the discharge of the duty which I have assumed, I hope it will not be out of place if I, a civilian, venture to occupy your attention with some points in connection with the surgical aspects of the war. For the first time in our history the country has been largely represented by civilian surgeons in a great campaign. In the Crimean War a few were so employed, but in the present case civil aid has not been only casual or occasional. Many hundreds of surgeons have left their peaceful practice at home, and volunteered for service in the field to help their brethren of the Royal Army Medical Corps. They have had the opportunity of seeing what active service is, and the results of it; have tasted to the full its discomforts and horrors. They have had entirely novel experiences. They have been taken from the placidities of home-life and thrown into the bloody turmoil of war, looking with unaccustomed eyes upon scenes which often thrilled and never ceased to interest.

### THE GENERAL EFFECT OF MODERN SMALL BORE FIRE.

For nearly fifty years Great Britain had not met a white-faced foe, and the weapons of war had been entirely revolutionised. The smooth bore musket, with its round bullet, had been succeeded by rifles of large calibre; these in turn had given place to the Snider and Martini, to be followed by rifles of small bore and great range, and of these our own experience was one-sided, for even in our late Indian campaigns they had hardly ever been used against us.

The knowledge of the effects of these weapons from their use by both sets of combatants was limited to the war between the United States and Spain. But in the Cuban campaign there were no great masses of troops engaged; and the casualties were comparatively few. Thus we entered upon the war in South Africa without any comprehensive idea of what the surgical results would be in a conflict between two forces each armed with the small-bore rifle. It was said that with the rapid discharge of which these arms are capable—supplemented by the magazine—no troops could escape destruction. Indeed, the world is still without experience of what would happen with great bodies of men handled according to European methods, as in the Franco-German war. But these methods did not exist in South Africa. The Boer rarely appeared in the open, and then only in small numbers. His plan was to seize some kopjes with a secure line of retreat, to entrench himself, and await the attack. From these positions the ground usually stretched away in a flat plain. without a tree or a boulder, and with sometimes only a small ant hill here and there to give protection to the assailants. The conditions, then, were—an unseen enemy well entrenched in a commanding position; a large body of troops advancing and exposed to view, an object upon which thousands of sharpshooters were pouring fire. The rifle began its work at a couple of thousand yards; aim became more sure as the intervening distance decreased, until sometimes fire was delivered into our soldiers at one hundred yards, or less, as they made the final rush.

One would naturally expect as a result of all this a terrific mortality. It is true that we have lost heavily, but certainly not more heavily than the enemy. Yet if we look to proportional effects, and compare these with those of campaigns in which the weapons were of cruder form, and of less range and penetrating power, we see that there is not the difference which was anticipated in the amount of damage inflicted. In the American Civil War of forty years ago the killed were 17·97 per cent. of those hit, or one man killed for every 4·56 wounded. In the recent war in Cuba, where the Mauser rifle was used against the United States troops, the killed were only 11·9 to 88·1 wounded in each hundred—a very considerable decrease as compared with the results of the old rifle.

When the total casualties of Belmont, Graspan, Modder River, and Magersfontein are grouped, we have 17·24 killed in every hundred struck, almost identical with the return from the American Civil War. The latest figures bring our losses up to June 30th, and show that, of 22,646 hit, 4,355 were killed. In other words, 14·8 were killed to 85·2 wounded, a return higher than that of the Cuban War, but lower than that of the Civil War. The figures do not include those men who died subsequently from wounds, but simply give the immediate results of battle. The subsequent mortality returns, when they are available, will probably not vary much from these ratios.

I have not been able to separate the effect of shell-fire from that of the rifle, but it may be said that it did comparatively little physical damage. The war was essentially a war of small arms; and so far it would seem as if all the improvements in them have not added to their immediate destructiveness. But this conclusion would not be entirely justifiable. The weapons are more accurate and of greater range than have been employed before, and given the same conditions of closer quarters and the formation of troops as formerly, opposed men. armed with breech-loaders and using magazines, must inflict terrible damage. We have had some instances of the result in this campaign. What has happened is that we have learned to diminish the effect of the fire by making considerable intervals between the men; so that there is much less damage from loose, unaimed firing than if the enemy had huge blocks of human beings for targets. If we add to this the fact that firing begins at a range of 2,000 or 1,500 yards, that the very light bullet is subject to the deflection caused by varying densities of atmosphere and force of wind. all conducing to inaccuracy of shooting, we have some reasons why the efficiency of modern rifle-fire under certain conditions has so happily disappointed our anticipations.

## THE EFFECT OF THE SMALL BORE BULLET.

When, however, we come to consider the nature of the wounds inflicted by the two classes of weapons the difference is very great; and this depends mainly upon the character of the bullet employed. The old flint-lock had a ball nearly seven-tenths of an inch in diameter, the Minie rifle of the Crimean War one of six-tenths, the Enfield of five-tenths, the Martini-Henry of four-tenths, the modern small bore represented by the Lee-Metford is about three-tenths, and the Mauser is a decimal smaller. The bullets in the first group were all of lead, and elongated, with the exception of that of the old musket; the bullets of the second group, however, which may be likened to an inch and a quarter of ordinary lead pencil, are encased in a hard cupro-nickel case, somewhat pointed, polished, and absolutely smooth.

The vast majority of wounds received in South Africa were caused by these bullets. It is certain that the enemy used other varieties; sometimes the soft-nosed sporting bullet, which, having an end of exposed lead, spread out on impact and inflicted a lacerated wound. Explosive bullets for big game have been found on prisoners; and the old Martini rifles were used with considerable freedom. In other instances the mantles were split at the top so that they expanded on impact. But it was not always possible to identify the effects as due to a missile contrary to the usages of civilised war.

There is a popular belief that an elongated bullet must hit its object practically at right angles if that object is upright when presented to the line of fire. But between the discharge of the bullet and its arrival at the mark a great many things may happen. It is often deflected in its flight, or it may be turned by clothing or other substances, and make its impact at all sorts of angles, causing large wounds. Sometimes the Mauser bullet has turned completely round and entered base forwards. But a great number strike the ground, or a stone, and become much more formidable in their effects. This ricochet produced many kinds of deformities in the bullet; the case was often torn off wholly or in part, and, when the primary contact occurred close to the body, spattered the skin about the entrance wound with small fragments of the cupro-nickel mantle. Now and again the exposed lead mushroomed and produced ghastly lacerations. But the result of a bullet striking soft parts sideways after a ricochet often made it difficult to believe that it had not contained a bursting charge. I was able to observe the effect of a Lee-Metford bullet on one of our own men. A soldier accidentally discharged his rifle at a distance of ten paces. The bullet ricochetted and struck the victim on the inside of the thigh posterior to the femoral vessels. The entrance was more than an inch in diameter, the exit at the outer side was a wound 2½ inches in diameter, with great loss of substance. Here there was no doubt as to the weapon or the ammunition employed. The soft structures alone were injured, but they presented the appearance that one would expect as the result of some powerful local explosive.

### WOUNDS OF SOFT PARTS.

The campaign in South Africa has presented many surprises. Perhaps none is greater than the large proportion of wounded who have recovered. Even severe wounds have responded to treatment in a manner which has surprised everyone having experience of surgical injuries. These happy results were due in the first place to the character of the bullet. The wound was in ordinary cases exceedingly small at both apertures, and the tendency was to close immediately. There was usually little hæmorrhage, and the openings were quickly sealed by exudation. This was an important first step. The pointed end of the bullet made the area of primary collision with the surface struck quite minute, and being covered in a hard mantle it acted like a steel wedge driven with great velocity through the soft parts, rather cleaving than tearing its passage onwards. It appeared to contuse the walls of the channel sufficiently to prevent considerable oozing, and not to lacerate or destroy. One of my patients, a man of the 11th Hussars, was shot transversely through the cartilages of the nose. The mere margins of the alæ alone remained to keep the outline of the perforations unbroken. If the bullet exercised a destructive force appreciably beyond the channel which it made, the edges of the alæ must have died, so thin were they; but they never showed any tendency to necrose, and the wounds were healed in three days.

But even in long flesh wounds in the extremities the same rapidity of repair was noticed. Here, again, the character of the injury influenced the result, for the walls of the track did not remain rigid, leaving a permeable tunnel. As soon as the passage had been accomplished the walls fell together, and thus further helped in the exclusion of air and the risks of sepsis.

Various suggestions have been made but have not been sustained that asepsis has been secured by the heat generated in the bullet itself—heat which it has been claimed is sufficient to destroy any pathogenic organisms. Cartridges carried in bandoliers were always exposed to contamination, but I have no doubt that the bullet received a thorough cleansing in the rifle. It was, of course, slightly larger than the bore, and was forced to take the turn of the rifling by the explosion. The result was a certain polishing of the outer surface under immense pressure, and the after sources of contamination could only be found in passage through the air, the man's clothes, and his skin. Practically penetration was effected by a piece of clean, very hard metal. Of course, there is no doubt that germs did gain access even under such circumstances, but in how many cases, even in operations under elaborate precautions, are they entirely absent? Unless the conditions which make them potent exist they give no trouble.

The second cause was the early application of the first dressing. This was not always done by the surgeon. Very frequently the wounded man was able to attend to his own wants in this particular. Sometimes dressings had been lost and a piece of old linen or window blind did duty. In spite of these, however, and of skin ingrained with dirt, the early closing of the apertures helped to avert mischief. But in the case of the extremities the bandages were of special importance in fixing the track of the wounds, in securing apposition of the walls, and in keeping the parts in that immobile condition which was of so much importance.

The third cause was the climate. The temperature was high, the atmosphere very dry and particularly free from germs hostile to the surgeon's work. The general elevation of the plains in the northern part of Cape Colony through Orange River Colony and on to the Transvaal varied from 4,000 to 6,000 feet, higher by nearly 2,000 feet than any mountain in the United Kingdom. The conditions, therefore, were exceedingly favourable. The intensely dry atmosphere quickly transformed oozing blood into crusts, and so helped on the healing in a wonderful way. In a moister climate the results probably would not have been as good, and we should have had to deal with a greatly increased number of cases of suppuration.

### WOUNDS OF BONES.

So far we have been considering the effect of the small bore bullet upon soft parts. Let me pass on to discuss the damage done to bones, and the rate of mortality which followed. The subject is important, because in this as in all wars injuries of the upper and lower extremities outnumber, many times over, those of any other part of the body. I will take a convenient illustration—the American Civil War. The total number of wounded treated in the Northern Hospitals was 245,800; 71,594 were wounds of parts excluding the extremities; wounds of the upper extremities were 87,793, of the lower 86,413. These produced fractures of bones in 32,992 and 27,274 respectively, or a total of 60,266. Injuries of bones, then, hold the first place in number, and hitherto they have been followed by an appalling mortality.

It is in the damage inflicted upon these structures that we find the strongest evidence of the power of the small bore. As the improvement in the rifle developed, there was also an alteration in the shape of the bullet, which became elongated, and during these changes the character of the injuries to bones became correspondingly severe.

The velocity at which the modern bullet travels as it leaves the muzzle may be taken as about 2,000 feet a second, but during the flight this rate is gradually reduced owing to well-recognised causes. It is obvious that if the bullet, within a few hundred yards after it has been fired, strikes a bone, it does so with crushing force; and that the severity of the injury decreases just in proportion to the distance which intervenes between the rifle and the object struck. In other words, the greater the velocity the greater the destruction when the bullet is suddenly obstructed by striking the shaft of a bone. Without entering into a discussion of the so-called explosive force produced on impact, what we find is that the bone is much comminuted, and that fragments are carried some distance onwards in the soft parts as the bullet travels. But as the velocity lessens the effects are not so destructive; the bone is broken, sometimes into a few pieces, at the point at which it is struck, and sometimes the fracture has no subsidiary fragments. Occasionally a case is met with in which the velocity has been just enough to break the bone, but not to carry the bullet through the limb after the collision.

The behaviour of the bullet in the cancellous structure of the ends of bones differed from what I have just described. In the older forms of conical bullets with low velocity there was much tendency to lodge in these structures, but in this campaign the injury was chiefly a complete perforation. The different structure of the ends of bones as compared with the shafts accounted for this. The cancellous tissue presented a more or less elastic obstacle and yielded to the impact; but in the case of the shaft the hardness of the parts struck offered considerable resistance, and much of the force of impact was expended in breaking the denser obstruction into minute pieces.

## AMPUTATIONS THROUGH THE THIGH.

In the campaigns of forty or fifty years ago few injuries were more fatal than gunshot fractures of the femur, and the doctrine which had been laid down by earlier writers that amputation should be immediately performed still largely influenced practice. The flesh wounds were much more severe. Principles of cleanliness had not yet been formulated ; the wounds always suppurated, and the result was a compound and comminuted fracture, which often developed the worst forms of sepsis. It was to avoid these almost inevitable results that amputation was advised, for it got rid of a lacerated wound and fragments of bone and gave for a time a hope of safety. Nevertheless, the mortality was appalling. Here are a few figures :—

*Results of Amputation of Thigh in Gunshot Fractures.*

| | Cases | Recovered | Died | Percentage of Mortality |
|---|---|---|---|---|
| Crimean war ... ... .. | 2,748 | 227 | 2,033 | 73·5 |
| American war (North) ... ... | 6,229 | 2,839 | 3,310 | 53·8 |
| Franco-German war (German) ... | 798 | 243 | 514 | 65·6 |
| „ „ (French) ... | 3,794 | 342 | 3,452 | 90·9 |

Out of a further group of 9,017 cases 83 per cent. died.

But the results of conservative treatment did not show to much more advantage in the Crimea and the United States. I give the figures in the same campaigns by way of strict comparison.

*Results of Conservative Treatment in Gunshot Fractures of the Thigh.*

| | Cases | Recovered | Died | Percentage of Mortality |
|---|---|---|---|---|
| Crimean war ... ... .. | 555 | 153 | 402 | 72·4 |
| American war (North) ... ... | 3,467 | 1,689 | [a]1,684 | 49·9 |
| Franco-German war (German) ... | 811 | 580 | 233 | 28·7 |
| „ „ (French) ... | 896 | 811 | 85 | 9·4 |

Nevertheless there was an improvement. The historians of the American Civil War hailed as victory the return which showed a mortality of 49·9 in conservative practice as compared with 53·8 for amputation. It was a gain of nearly 4 per cent. for the treatment which aimed at saving the limb. Then came the Franco-German War, nearly ten years later, and the lessons from America bore fruit. There was still a large number of surgeons, whose opinion was valued, who believed in immediate amputation, but even these yielded to the force of experience. and conservation as against amputation won by a difference of 26·9 per cent. The experience of France was remarkable, as only 85, or

[a] Result unknown in 94 cases.

9·4 per cent., are reported to have died without amputation; but the number given is so small that I am not prepared to accept it as representing the surgery of the period. Still, the lesson remains that in those campaigns when the revolt against amputation began, the result was with the progressives.

But, if we turn to the recent Cuban war we have a further gratifying experience. Surgeon-General Sternberg reports that during the two years 1898-9—

"Eighty-two cases of gunshot fracture of the femur were reported, 6 of which were treated by primary amputation and 2 by resection, the remaining 74 cases being treated by conservative methods, not because the conditions were not favourable for the performance of primary operations, but because of a conviction that under present methods of treatment the limb could be preserved without materially adding to the danger of life. The limb was lost through surgical intervention in only 7·3 per cent. of the cases. Of fracture of the upper third there were 32 cases, of which 5 were fatal under conservative methods; of the middle third, 27 cases and 3 deaths; of the lower third, 23 cases and 1 death. A general mortality of 10·8 per cent."

This is a splendid record of the treatment of compound fractures of the femur in the field.

I am not able to lay before you like figures from the campaign in South Africa. They have not yet been completely analysed, and partial results are apt to leave false impressions. Nevertheless, I think I may say that in no war have the number of amputations been so few, the number of limbs saved so many, or the mortality from such operations so small. Amputation of limbs was quite the exception, and was only done when the case was otherwise beyond hope. For, the lessons of modern surgery, the vast possibilities of recovery which the teachings of Lister had put within the grasp of every practitioner of the art in the world, had already proved that the nearer we could approach to natural conditions the greater the safety for the patients. Therefore, when a bone was broken by a bullet, and there was no other lesion but the track made through unimportant soft parts, the indication was to apply an antiseptic dressing at once, to secure as much immobility as possible, and to have the patient sent to a place where rest and more deliberate attention could be had.

### EXAMINATION OF WOUNDS.

The treatment of these cases in the first stage has led to some difference of views among surgeons; but I am satisfied that reason and experience point in one direction only. It has been recommended that fragments of bone which have been detached from the shaft ought to be removed, and the limb then secured in splints. I am strongly of opinion that local examination ought not be carried out unless the surgeon should be driven to it by developments. The fact that bone is broken can be elicited quite easily by the methods which we employ in a simple fracture. Of what value in treatment on the field is it to learn whether there are four or forty fragments? What should we learn by passing in probes or fingers except that there was fracture, and that there were many pieces? To do this we should enlarge the wound considerably, introduce things that, probably, were not aseptic, disturb adhesions that were already in progress, break down clots, and generally do the things which were the very worst for the patient. It is surprising what little trouble many fragments apparently separated from sources of vitality may give. If they do necrose later on they can be dealt with under safe conditions. But I am quite sure that, with rare exceptions. the wrong thing to do on the battle field in a recent wound by a bullet involving fracture of a bone is to explore it with probes, or to enlarge it for the passage of a finger and the removal of fragments.

### WOUNDS OF JOINTS.

One of the interesting features of the surgery of the campaign was the injury done to joints. In a majority of cases the bone was more or less injured, but in three out of five cases of perforation of the knee-joint under my own care there was no apparent involvement of bone. Such cases did very well, most of them pursued an aseptic course, and recovered with good movement. Even suppuration did not demand more severe measures than incision and drainage. I have seen a bullet traverse the two malleoli and the astragalus with perfect movement remaining. In the case of a naval officer, the head of a pompom entered the astragalus and practically destroyed it, all that remained being the dense walls. There was a fracture of the tibia as well, and the limb would certainly have been amputated under the old rules; but I succeeded in saving the foot, although with a stiff joint, and he is still in the service. Excisions, again, were rare; and amputations were only performed on the field when vital parts were involved, or there was terrible destruction by a shell, which was an event of infrequent occurrence.

I have specially referred to injuries of the knee-joint, because I wish to indicate how satisfactory our experience of them has been in this campaign as compared with that of forty years ago. Then the doctrine was that whenever the knee-joint was penetrated by a bullet, whether the bone was fractured or not, the limb should be amputated, and the sooner the better. This view existed not only before the American war, but was emphasised by the experience then acquired. In the Crimea, out of 138 cases 45 recovered and 93 died, or 67·3 per cent. In all but 3 of these there was fracture, of which the recoveries were 43, and the deaths 92. In the American war there were 793 cases, of which 402 recovered and 376 died, or 48 per cent. In 359 instances there was fracture, of which 309 recovered and 350 died.

The proportion of cases in which bone was involved in wounds of the knee in the present campaign will perhaps be found to be somewhat less. But there can be no doubt that in spite of such a serious complication the cases did extremely well. The excisions must have been very few, for I did not see or hear of any. The simple perforations were attended by some blood effusion, and, in my own experience, trivial synovitis, and in these cases treatment by carefully occluding the openings and keeping the limb at rest was generally sufficient to secure safety and early restoration of normal movement.

## PENETRATING WOUNDS OF THE ABDOMEN.

But the problem which most exercised the minds of surgeons in South Africa was the treatment of penetrating wounds of the abdomen. These had always been marked by the highest mortality in war. In the Crimea 92·5 per cent of the British so injured died; 91·3 per cent. of the French. Here was a field in which there was plenty of scope for improvement. In the interval between that great campaign and the present far-reaching changes had taken place in the practice of surgery. It had been shown in civil practice that it was possible to deal with almost all kinds of pathological conditions within the abdomen. In our own country the surgery of this region had reached such a high level of security that many believed that the successes of the civil hospitals could be extended to the field of war, and that at all events the mortality would be diminished very effectively. The late Marion Sims had strenuously pleaded that these cases ought to be submitted to operation, because therein lay greater hope for the patient; and there were few surgeons who went to South Africa who did not hold the same view. In a few months, however, they abandoned that position, after experience of the actualities of war and the almost uniformly fatal results which followed—if they did not depend upon—interference.

I think the causes of this were not far to seek. In civil life a patient so wounded is quickly brought into the best position for operation with all the appliances at hand which are almost essential to success. In warfare a wounded man may occasionally reach the field hospital within a short time, but when the casualties count into hundreds and thousands delay may extend into twelve, and, in some cases, twenty-four hours before he is even rescued. Now if there is an injury which should be treated promptly it is a lesion of the intestine; but the conditions in which operation should be done, if there is to be a hope of success, are not to be found in a field hospital. The equipment is not sufficient or efficient, water is usually bad—in South Africa it was loaded with earth from which no filters could free it; it could not be boiled in sufficient quantity, and what we understand as the toilet of the abdomen was out of the question.

There were, as I have hinted, two periods in which the surgical attitude towards these cases was quite different. In the early days many abdomens were opened, but probably all the recoveries after operation were less than a score. This depressing result has corroborated the experiences of surgeons elsewhere. In the Tirah campaign 5 cases of laparotomy were reported, but they all died. In the late Cuban war Senn says that the 4 operation cases of which he personally knew all died. Surgeon-General Sternberg, of the United States Army, reports officially that in the two years 1898–9 they had 116 perforating wounds of the abdomen, of which 81, or 70 per cent., were fatal, and that of 10 cases in which laparotomy was performed 9 died. In South Africa I have known of a series of 9 cases with 1 recovery Dr. J. E. Neale, civil surgeon, has, however, reported[a] a case of a man wounded at Frere; fifteen inches of the intestine were resected, and the patient never had a bad symptom.

But, as I have said, while the whole experience of operations was almost uniformly disappointing even in the most skilled hands, it was observed that many men with wounds of the abdomen did not present any alarming symptoms at all, and that many of them quickly recovered. Mr. Watson Cheyne gives his impression, derived at Capetown, that only 20 per cent. of the abdominal cases had died; but this, of course, did not account for that large number killed outright, or for those who lingered for a few days and died before they could be transferred to the base. We are not yet in a position to deal with exact figures because they are not procurable; but I think it will be found that the proportion of deaths was far in excess of this. Indeed, Mr. Cheyne's subsequent experience at the front induced him to regard the death-rate as much higher. He reports 27 cases, of which 18 died (2 after operation); Mr. Cheatle 10 cases, of which 9 died. From the Philippine war Dr. Robinson has published figures which show 45 cases, with a mortality of 48·9 per cent. But of these 8 were killed, or died within 24 hours.

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[a] British Medical Journal. Vol. I. 1900. P. 604.

The interesting fact brought out, however, is that of 30 cases which were not operated upon only 10 died, showing in this group a mortality of but 33·3 per cent.

These cases include all kinds of internal injuries, many of them necessarily mortal from hæmorrhage, as in wounds of large vessels. But if we limit our inquiry to wounds of the intestines we are still met by serious difficulties in settling the question of operation. Apart from the initial one of the unsuitable surroundings of the field hospital and the insecurity which must attend opening of the abdomen there, we must first try to determine whether the bowel has been wounded at all. If we accept the evidence of the apertures of entrance or of exit, there generally appears to be no doubt that the bullet has passed direct between the two points, and it seems impossible that the bowel has escaped perforation. But there is abundant evidence, both recent and remote, that bullets and even sharp weapons have traversed the abdomen, not only without fatal results, but without symptoms of perforation of the intestine. I shall not trouble you with any other instance than that given by Mr. Cheatle, and reported by Mr. Makins in his admirable book on "Surgical Experiences of the War." There the bullet passed through the cæcum and the sigmoid flexure, but the intervening small intestine presented no indication of the slightest injury. Even upon this one case it may be affirmed that a bullet can traverse the abdomen without wounding the intestine. I have seen or treated many cases in which the track of the bullet made it almost a certainty that it passed through the bowel, and in which the patient presented absolutely no symptoms up to his discharge from hospital. Now here we have another problem. Are we justified in opening the abdomen in such a case as soon as we see it, with no other evidence than two external openings and a belief that the bowel cannot have escaped? There can be no doubt, I think, that after a prolonged search for wounds in the intestine which did not exist the patient's chances of recovery would be much on the wrong side.

But I go further and take the cases in which there is actually a wound of the intestine. Is it possible for recovery to take place? I am quite satisfied that in very many instances of this injury from the Mauser or Lee-Metford bullet the patients survived. Some of them had bloody stools and other symptoms which made plain the nature of the lesion. Many reasons have been given for these remarkable escapes. Probably they have depended in the first place on the angle of the impact of the bullet. A more or less direct hit would make a very small opening, which was immediately closed into a slit by contraction, and in some degree blocked by mucous membrane. The openings may have been further secured by pressure against an adjacent intestine, as suggested by Sir Frederick Treves, and kept secure until finally healed. But if we go back to Mr. Cheatle's case, we find there was no extravasation from the cæcum and no inflammation about the aperture, which had shaped itself into a minute slit. If, however, the bullet struck at a smaller angle, it would probably make multiple oval openings, with such loss of substance as to lead to extravasation and rapid infection of the peritoneum.

I have tried to show that there are cases in which there is no perforation, although we may suspect it, and cases in which wounds occur which may run a safe course, and in which operation would only lead to greater risks.

There remains the group in which the wound does allow of extravasation, and in which from various signs and symptoms we are able to recognise the condition. These cases as they stand are almost but not quite certain to die. Can we do anything to diminish this tendency?

I revert to the difficulty of operating upon them in a field hospital, and yet to send them back to a stationary hospital is almost hopeless. They ought to be operated upon at once, but they are sent away with an infected peritoneum, which becomes worse each hour. What chance is there for successful interference at the journey's end, when the patient is exhausted by pain and exposure, and has been jolted in an ox waggon for a couple of days. Yet if operation is to be done quickly there must be some better equipment of field hospitals and more suitable preparations for this special work, for it is tedious and exacting, and it demands expert hands and sound knowledge. But every foresight will be nullified by the pressure of a severe engagement where there are many men to be attended to. When everyone is working at high pressure night and day there is no time for the prolonged operations on the abdomen, unless it is possible to set apart one surgeon to deal with such cases only.

On the whole, then, considering the difficulty of diagnosis in many instances at the outset, the fact that intestines may be found unwounded, and if wounded may be occluded by natural processes if not interfered with, it seems to me that in war as we stand at present the man whose abdomen is perforated by a small bore bullet has a better chance of life without operation than with it, bearing in mind the circumstances on the field under which laparotomy must be performed. That is an opinion which I think most surgeons came to when experience had ripened after the early months of the campaign. Although the judgment may be a little humiliating it is one which must for the present be accepted.

## LODGED BULLETS.

The war has developed once again the discussion upon the removal of bullets. Formerly with the low velocity the proportion of lodged bullets was much larger than it is now. Some surgeons are of opinion that the missile ought to be searched for and removed at as early a moment as possible. I think the practice in ordinary circumstances unjustifiable. If the nature of the wound enables us to reach the bullet without trouble, or if it has lodged under the skin and can be reached by a simple incision, it may be removed. But remembering the character of the wounds made by the Mauser, in most cases enlarging the apertures, or a search with probes or other instruments, may mean a suppurating instead of a non-suppurating track. It has been said in justification that the bullet may become displaced and give rise to troublesome after-effects. If these should occur the cause can then be dealt with, but a bullet may lie buried with impunity throughout a long life. Therefore, except under special circumstances, which are sufficiently obvious, nothing should be done beyond trying to occlude the wound and to secure it from contamination.

## PROGRESS MADE BY MILITARY SURGERY.

I should have liked to speak of several other forms of injury, all of them full of interest, and of the great advantage given by the use of the X-ray apparatus, but the limits of time demand that I should confine my remarks to some salient facts only. The war is still in progress, and it will take a considerable time after its conclusion before we can make an effective summing up. But even thus far we have materials for conclusions which are not likely to be much modified. We have seen a marvellous proportion of recoveries from severe wounds, and we have been able to rejoice at the great reduction of suppurating cases, and the practical absence of such infective diseases as tetanus, erysipelas, pyæmia and hospital gangrene. This great difference in the records of to-day as compared with those of older and more bloody wars does not depend mainly upon the alteration in the bullet used. That, as we have seen, can do fearful things to a dense obstacle, and add to its power for mischief by the laceration caused by bony fragments which it scatters on impact. To some extent the smallness of the canal made by it helps towards recovery. But, above all, the results are due to the treatment of the wounds by the surgeon, and the operation of those great principles which have developed under the splendid genius of Lord Lister. He has made possible the unquestionable triumph of conservative treatment. Honoured as he is throughout the whole world, proud as we all are to claim him as a compatriot, his most enduring memorial will be in the multitudes whom he has been the means of saving from pain and death, and in the direction which he has given to scientific surgery for all time.

When the recoveries from wounds in this war are made up and analysed, it will be seen what a tremendous progress has been made in protecting the injured from disaster, even in the face of all the difficulties of the battlefield. For, while in the general and stationary hospitals the precautions necessary in modern surgery can be observed, it is, after all, at the initial stage that safety from sepsis is to be secured. "The fate of the wounded rests in the hands of the one who applies the first dressing," wrote von Nussbaum, and the truth of this assertion has been proved every day.

War is at all times full of horrors, but as it is waged today it is less terrible than before. In the recent Spanish-American conflict the mortality among the wounded dropped from the 12·96 per cent. of the civil war to 6·64—a reduction of nearly one-half—a result in part no doubt due to the smaller bullet employed, but more certainly to the improved methods which have been established in the practice of surgery.

Our profession has taken its full share in the work in South Africa, and whether as officers of the Royal Army Medical Corps or as civil surgeons, all have worked ceaselessly in ministering to the sick and wounded. They have not flinched in danger on the field, and they have vied with their combatant fellows in deeds of valour. Six medical officers have been killed; 9 have died of disease; 12 have been wounded; 3 civil surgeons have been killed; 11 have died of disease; and 5 have been wounded. Of all branches, including orderlies and nurses, nearly 400 medical helpers have fallen victims to their labours. It is a noble record of devotion. We must always glory in it, but so also must we delight to know that the true spirit of patriotism is still with us, and that so many of our profession have been ready to show, by rendering up their lives, that "A country's a thing men should die for, at need."

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## ART. IV.—*Medical Experiences in South Africa.*[*] By JAMES B. COLEMAN, M.D., F.R.C.P.I.; Physician to the Richmond, Whitworth, and Hardwicke Hospitals, and to the National Hospital for Consumption for Ireland; late Physician to the Irish Hospital, South Africa, 1900.

IT is now a matter of history that when the Boer Republics declared war in October, 1899, the forces which we were able to oppose to them were utterly inadequate. The *personnel* and materiel of the Royal Army Medical Corps were exhausted when two army corps were provided for, and the help of civil surgeons and private hospitals had to be invoked to supply medical aid for the additional forces which were put in the field. Accordingly the Irish Hospital was equipped and sent to South Africa at the beginning of February, 1900, through the generosity and patriotism of

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[*] **Read before the Section of Medicine of the Royal Academy of Medicine in Ireland, on Friday, May 17, 1901.**

Lord Iveagh. Its staff consisted of Sir William Thomson, Surgeon-in-Chief; Mr. George Stoker, and Dr. Alfred Friel, Surgeons; whilst I had the honour of being Physician. We had six dressers, including Dr. Counihan and Dr. Pounden, with Messrs. M'Ilwaine, Stewart, Edwards, and Thomson, and between orderlies, drivers, servants, and artificers, our company numbered about 70. When we were going to South Africa the War Office would not consent to nursing sisters accompanying us, but at a later period Lord Iveagh sent out Miss MacDonnell, Matron of the Richmond, Whitworth, and Hardwicke Hospitals; and Miss Walker, Sister in Charge of the Whitworth Hospital, and their services can only be described as invaluable.

We arrived in Capetown at the end of February, and we were at once sent to Naauwpoort, in the extreme north of Cape Colony. Here we received orders not to set up our hospital, but to be ready to proceed to Bloemfontein when the railway line was repaired.

Whilst the Irish Hospital was delayed at Naauwpoort awaiting the opening of the line to Bloemfontein in March, I volunteered to do duty at No. 6 General Hospital, which was stationed at Naauwpoort, and was given charge of 7 marquees, containing 42 enteric cases. The hospital had about 700 beds, and I was astonished at the completeness of its equipment, situated as it was on the veldt, 500 or 600 miles from Capetown. At that time about a third of the cases in hospital were enterics. They were all lodged in marquees, there was no overcrowding, and they all had comfortable beds. There was no lack of medical comforts, but additional nurses and trained orderlies would have been desirable, especially for night duty. The medical staff of the hospital consisted of Lieut.-Col. Somerville Large and four other R.A.M.C. officers, who were occupied with the work of administration, and 16 civil surgeons, who attended to the treatment of the patients. In such a large hospital two senior medical officers would have been usefully employed as consulting physician and surgeon respectively. There were no facilities for bacteriological and pathological work, which was often necessary for accuracy of diagnosis and as a guide for treatment.

The Irish Hospital opened at Bloemfontein on the 13th April, 1900, our camp being pitched on sloping ground to the north of the town, at the foot of a large flat-topped kopje. We had accommodation for 100 patients in large, square tortoise tents, and from the start it was practically a fever hospital. The patients were very comfortable. On admission they were washed, supplied with pyjamas or night-shirts, and put into spring beds. They had everything that was necessary, except a sufficient supply of fresh milk, and for the latter condensed milk made a fairly good substitute. At first the nursing was done by our own orderlies, who displayed great devotion in the discharge of their arduous and often unpleasant duties; but subsequently we had trained nurses, and their advent was a godsend. Our patients at Bloemfontein were under favourable conditions, and in 150 cases of enteric in our hospital there we had 19 deaths—a mortality of 12·6 per cent.

In May I accompanied the mobile section of our hospital in the march to Pretoria, Sir William Thomson being in charge. We were attached to the 11th Division, the efficient and courteous P.M.O. of which was Surgeon-Colonel Magill, of the Coldstream Guards. We had 10 ambulance waggons, and our equipment was reduced to the minimum weight. We carried tents for 50 patients, and mattresses or stretchers for the same number. It might be imagined that on the march with a large army through the enemy's country the number of wounded would predominate over the sick, but the reverse was the case. Every day on arriving in camp we took cases of enteric into hospital, and when we entered Johannesburg we had 69 patients, of whom two-thirds had enteric. Many of those cases had been carried in our ambulance waggons day after day on the march, and they suffered very great hardships, but there was no help for it, as it was impossible to leave them anywhere *en route*. Fortunately we had no death on the march, but I fear some of those patients must have died subsequently in the Johannesburg Hospital, where we left them, notwithstanding the good treatment they received in that excellent institution.

The Irish Hospital was under shell fire on June 4th outside Pretoria, and next day we entered the town. On the 10th we had 105 patients, including 60 cases of enteric. We accommodated them in marquees and square bell-tents on the veldt near the racecourse, but the patients were overcrowded, and nearly half of them were lying on the ground, whilst, to add to their discomfort, the weather was cold and wet. In fact, the state of our hospital for about ten days after entering Pretoria was very unsuitable for the treatment of grave medical cases, and it was impossible to treat the enteric patients properly. But this state of things did not continue, for Sir William Thomson applied to the military authorities for the Palace of Justice for use as a hospital, and they not only consented, but allowed the building to be fitted up and furnished luxuriously for the reception of 500 patients. In this onerous undertaking invaluable assistance was given by the Hon. Rupert Guinness, Mr. Murray Guthrie, M.P., and Mr. Leigh Wood. On June 19th we transferred our patients to this building, equipped as it now was with electric light, hot and cold baths, and good beds. The rest of our staff arrived from Bloemfontein at the beginning of July, and the P.M.O. supplied additional nursing sisters and orderlies. A high standard of excellence was attained in the management of the Irish Hospital in the Palace of Justice, and it is no exaggeration to say that the patients were as well off as they would be in many a first-class civil hospital at home. We remained in the Palace of Justice in Pretoria until we left for home last October.

Of the medical cases treated in the Irish Hospital, first in importance comes enteric fever, which constituted a terrible plague during the campaign. At the end of June, 1900, Lord Roberts informed me that there had been 6,500 cases of the disease at Bloemfontein alone, with 1,300 deaths. At the same place two general hospitals had nearly 3,000 cases at one time, and everywhere at the seat of war the same scourge afflicted our troops.

In our hospital register there are entered 672 cases of enteric, but I think the number treated was considerably in excess of that figure, for in many instances the diagnosis in our register was taken from the admission forms, and was not afterwards corrected. For instance, many cases were sent in as "simple continued fever" which were really enteric, but the former diagnosis appears in our returns.

I had 260 cases of enteric under my care, and through the courtesy of my colleagues I saw many of their cases. In general, the type of the disease did not differ from what we see at home. The diagnosis in doubtful cases was confirmed by a positive Widal reaction. In Bloemfontein I used the dead typhoid bacilli for the serum diagnosis, and I found they "clumped" satisfactorily with enteric serum. In Pretoria I had the use of the Staats Laboratorium, which was carried on under the able direction of Dr. Schmitz Dumont. Here I started fresh broth-cultures of typhoid bacilli, which I renewed from time to time, and I classed no doubtful cases as enteric in the absence of a positive serum reaction.

The temperature in our enteric cases calls for a few remarks. It was very high and very irregular. Twenty per cent. of my cases had a temperature over 105° F., and two cases over 106·5°. Late in the disease there was extreme intermittence, so that malaria had been wrongly diagnosticated.

Enteric spots were present in 85 per cent. of the cases, and a transient erythematous rash in 10 per cent. Diarrhœa, on the other hand, was not troublesome in more than 20 per cent. of the cases.

Intestinal hæmorrhage occurred in 9 per cent. of the patients. The spleen was enlarged and the abdomen distended in nearly every case. Delirium was frequent.

Lung complications were common, particularly bronchitis (18 per cent.), pleurisy (3 per cent.), pneumonia (2 per cent.), and œdema of the lungs. In two cases I saw Cheyne-Stokes' respiration.

Peritonitis and perforation occurred in less than one per cent. of the cases, and thrombosis in 6 per cent.

The less frequent complications included epistaxis, meteorism, otorrhœa, neuritis, laryngitis, tonsillitis, parotitis, orchitis, retention or incontinence of urine, albuminuria, hæmoglobinuria, cystitis, urticaria, boils, mania, syncope, and hyperpyrexia.

Relapse or recrudescence was noted in about every fifth case.

As to the mortality in enteric, we had 79 deaths in 672 cases, being a death-rate of 11·9 per cent. This was much lower than the general enteric mortality, but I make no invidious comparisons, as the conditions under which cases were treated were never alike. Eight of our cases died within 48 hours of admission to hospital, and four more within 72 hours. For a month after the occupation of Pretoria the condition of the Irish Hospital as regards equipment, &c., was superior to other hospitals near the capital of the Transvaal, and for this reason we were sent an undue proportion of very severe cases. For instance, on 20th June we received a sick convoy of 30 cases of enteric, which were sent from a field hospital about 12 miles east of Pretoria. Those cases were selected as the most severe of 120 cases in the field hospital, and they were sent to us as we had greater facilities for treating them. I regret to say that 9 of these cases died.

The most frequent cause of death was heart failure, and this occurred both early and late in the disease. Many of the fatal cases presented the picture of a severe toxæmia, and in such cases a pulse rate over 120 was always an ill omen. Among the fatal cases bronchitis and œdema of the lungs were very common, pneumonia was present in about 4 per cent., and perforation in 6 per cent. In one case cardiac syncope occurred in convalescence.

*Post-mortem* examinations were made in most of the fatal cases, and the usual enteric lesions were found.

The treatment adopted was expectant. For heart failure, stimulants and strychnin; for diarrhœa, restriction of the quantity of milk was usually all that was called for; for hæmorrhage, opium and turpentine mixture; for pyrexia, sponging or cold compresses, and occasionally cold baths. Wherever possible the use of the bed-pan was insisted on, and patients were not allowed to leave their beds for any purpose. During convalescence I endeavoured to increase the amount of the patients' diet as rapidly as possible, each case being treated on its merits, and the general condition of the patient being considered in addition to the one symptom of temperature.

Many of the troops were subjected to anti-enteric inoculation, and the value of the process has been much discussed. Whilst it cannot be described as an unqualified success, I believe it has been of use both as a preventive and in modifying the attacks of the disease.

Out of some sixty men of the staff of the Irish Hospital who had been inoculated six contracted enteric and one died About 10 per cent. of all our enteric patients had been inoculated, and in the majority of these cases the attacks were mild and of short duration. Among the inoculated cases the death-rate was little over 5 per cent., as contrasted with 12 per cent. in the uninoculated. Too much should not be expected from inoculation when we consider that enteric may occur more than once in the same individual, and we cannot expect inoculation to produce stronger immunity than an attack of the disease confers. We had several patients who had enteric before, in India or elsewhere.

I have already remarked that many cases of enteric were sent to our hospital with the diagnosis of "S. C. F." (simple continued fever). I quite satisfied myself that those cases were enteric. In many instances they presented the clinical symptoms of enteric, and autopsies were performed on fatal cases, which showed typical enteric lesions in the intestines. Other cases, though very mild on admission, had undoubted enteric relapses; whilst in others the history was characteristic. Finally, numerous cases which I examined gave a positive Widal reaction.

I believe that ambulatory enteric was common, but I do not contend that every patient with ill-defined febrile symptoms had enteric. I allowed the diagnosis of simple continued fever to stand in some cases, and influenza or febricula accounted for others.

The exaggerated intermittent temperature which was present towards the termination of an attack of enteric occasionally led to the mistaken diagnosis of malaria or "typho-malaria." The effect of large doses of quinine in reducing such temperatures was adduced in favour of their being of malarial origin, but the temperature fell also in the absence of quinine. Further, I examined the blood of such cases for the plasmodium malariæ always with a negative result, whilst the same blood gave a positive Widal reaction.

Medical cases other than enteric do not call for much comment. Dysentery was common, but the disease assumed a mild type, and the mortality was less than 1 per cent. I failed to find the amœba coli in the stools, and in no case did I see an abscess in the liver. The catarrhal form of the disease prevailed. For treatment, rest, milk diet, and sulphate of magnesia were efficacious, whilst the administration of ipecacuanha was disappointing. The worst cases of dysentery which I saw, including two fatal cases, were chronic cases of the disease which had been originally contracted in India.

Diarrhœa was very prevalent. Few men escaped a severe attack within a short time after landing in South Africa, and a certain amount of immunity resulted. The complaint was commonly known as "modders," from its supposed origin in drinking the Modder[*] river water. In some cases symptoms of severe enteritis or of gastro-enteritis were present.

A number of patients suffering from catarrhal jaundice were admitted to hospital about the time of the occupation of Pretoria.

Comparatively few patients were admitted to the Irish Hospital with malaria. Basing the diagnosis on the presence of the plasmodium in the blood, I came across no case in which malaria had been contracted in the Orange River Colony or in the Transvaal south of, or in, Pretoria. Most of the patients admitted for malaria had the disease previously in India or in Egypt, or in Rhodesia, but in some instances it had been acquired in the northern or eastern districts of the Transvaal. Simple tertian ague was invariably the form of the disease in the patients examined by me.

Rheumatic fever was of frequent occurrence, complications being few. Some cases were much prolonged.

Of pulmonary complaints the most serious was acute croupous pneumonia, whilst bronchitis and pleurisy were also prevalent.

Acute or subacute Bright's disease was not of uncommon occurrence, and a few patients were admitted with Bilharzia disease (endemic hæmaturia).

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[*] Muddy.

I saw many cases of "irritable heart" and tachycardia, and of the rarer diseases I may mention Addison's disease and alopecia universalis.

Before concluding I would wish to emphasise the fact that the number of medical cases in the hospitals in South Africa was vastly in excess of the surgical cases, and the corollary is that physicians were more needed than surgeons. In the Irish Hospital we treated 2,748 patients, of whom more than five-sixths were medical. Contrast our 672 cases of enteric with 114 cases of bullet-wounds. In Bloemfontein in the large general hospitals the enteric patients outnumbered the wounded in the proportion of 20 to 1. Looking at the official lists of casualties, how often do we not see the statement at the top of a long list of deaths, "Died of enteric unless otherwise stated?"

Consulting physicians would have been of incalculable service in all the large hospital centres at the seat of war, and it is to be hoped that if, unhappily, the occasion arises again the sick will have the benefit of the services of a sufficient number of physicians.

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## ART. V.—*Nasal Suppuration; its Causes and Differential Diagnosis.* By S. HORACE LAW, F.R.C.S.I.; Throat Surgeon to the Adelaide Hospital, and Surgeon to the Dublin Throat and Ear Hospital.

THE first thought that will enter the mind on reading the above title is one of astonishment at the temerity of the author in attempting to deal with so large a subject. The excuse must be that it is not intended to make a complete essay, but to give a short synopsis of the latest writings on the subject, which the writer hopes may prove useful to those who find it impossible to follow the subject through its devious paths in the papers and periodicals of the day.

Up to fifteen years ago little had been done, and less written, on this subject; then in various centres work simultaneously began on this region, and now we may claim that at any rate we have laid the foundations of accurate knowledge of these conditions. It should be here added that the subject is treated from the point of view of the general practitioner rather than to enlighten the specialist.

The subject before us allows of a practical and useful division into two parts—one, the suppurative affections of the accessory sinuses of the nose; the other, all other conditions which may produce a discharge of pus from the nostrils or naso-pharynx. It is proposed to deal first with the latter.

In children especially a condition of fœtid discharge from one nostril is often seen, and a history of the introduction of some foreign body is given by the parents; such things as slate pencils, boot buttons, shirt buttons, pebbles, fruit stones, may be found, or even soft substances such as paper (the author has seen one case of this). Such a condition produces a very copious and irritating discharge from one nostril with absence of respiration through the side affected. Rhinoliths may also form with some such body as their nucleus. The diagnosis is easy from the history, unilateral discharge, and by touching with a probe or seeing the object in the nose. The most likely location is in the inferior meatus.

Tumours (excluding polypi, which will be considered under a separate heading) are, on the whole, rare, and more often invade the nasal cavities from some neighbouring organ.

Nothing more requires to be said than that suppuration generally occurs in the case of malignant tumours only, benign growths usually not producing it, and even in malignant it is by no means the rule. Here the consideration of the growth and its cure demand all the thoughts of the attendant, and the purulent discharge does not affect the question. A purulent discharge is pathognomonic of no particular tumour in the nose, and neither for nor against malignant growths.

Pus may be found coming from the anterior nares in suppurative conditions of adenoid vegetations, though the greater portion is seen, on looking into the mouth, descending from the naso-pharynx. This remark also applies to suppurative inflammation of the recessus pharyngeus. These conditions can only be properly recognised by posterior rhinoscopy, when the source of the pus may be located without extreme difficulty.

As is well known, adenoids are a disease of childhood tending to undergo absorption on reaching puberty, but in delicate and ill-cared children a condition of inflammation and formation of pus is constantly found, and matter may be seen coming from both the naso-pharynx and the anterior nares; this is usually accompanied by a fœtid odour. The other condition mentioned above, that of suppuration in the small pit or recess found in the centre of the posterior wall of the naso-pharynx, is a condition which usually presents itself in early adult life and causes the patient a great deal of discomfort—a constant feeling of something in the throat which cannot be easily coughed up, and an inter-arytenoid laryngitis are among its most frequent symptoms, with, perhaps, a history of adenoids during childhood, as many think this is a sequela to untreated adenoids.

Necrosis of the nasal bones next claims a brief notice. The two common kinds are simple and syphilitic. The simple will be left for consideration under the heading of polypi. The syphilitic is most frequently found attacking the septum, and often confines its ravages to the vomer, which may necrose completely and require removal *en masse*. This gives rise to a terrible stench and great quantity of discharge, and may simulate a foreign body—which, in fact, it is—so exactly, that until its size and relations are made out no diagnosis is possible. The vomer is usually recognised by its wings, which, when in position, embrace the rostrum of the sphenoid bone, and the points of differential diagnosis are that the sequestrum is often felt on both sides, while a foreign body is felt only on one side, and, as a corollary of that, pus escapes on both sides in necrosis of the septum, but only on one in cases of foreign bodies. The history in these cases is usually very uncertain. Other parts of the bony framework may be effected in a like manner, but no separate mention is necessary or indeed useful for our present purpose.

Ulceration of various kinds is often seen. The common forms are lupoid, tubercular and syphilitic. No long account of these conditions is needed here, and the reader must be referred to a work on nasal surgery for their differential diagnosis. They all produce some discharge, so require mention. Abscesses in the nose, except for small follicular affections, practically confine themselves to one condition—namely, abscess of the septum, which follows injury, as a general rule, and is seen on the septum, bulging it outwards.

It is acutely painful, in contradistinction to most of the abovementioned affections, and the diagnosis presents no difficulties, as fluctuation may be easily felt with a probe.

Up to this point the terminology has been simple, and no discussion as to the meaning of names has been necessary, but now that rhinitis claims our attention certain terms must be used which are often misapplied. Simple rhinitis does not come under our heading, so the consideration of the purulent form may be at once proceeded with. It is of two kinds—hypertrophic and atrophic; to the latter the term ozæna is usually applied, and, according to the writer's view, should only be used in this connection, though many use it simply to mean a foul-smelling discharge from the nose. There is such a characteristic smell from atrophic rhinitis that differs from all other nasal odours, that it is entitled to a special name, and the majority of writers accord it one—namely, ozæna.

Many other of the purulent discharges are foul, but atrophic rhinitis has a distinct and marked smell of its own, so much so that, once perceived, it may always be recognised again. There is also another distinctive feature of ozæna, that the patient does not appreciate the odour at all. Purulent rhinitis is almost always bilateral, and the pus is more mucoid in character, except in the atrophic form, when it tends to form cakes or crusts, often of enormous size. The atrophic form, when at all advanced, is easily recognised—the large open space lying between the deformed and shrunken turbinals and the septum, crusts sticking on here and there, the openings of some of the accessory sinuses visible, the characteristic smell perceived by the observer, but entirely overlooked by the patient, possibly the sunken bridge of the nose, due to absorption of bone—all tend to make the diagnosis easy. This is far from being the case with the hypertrophic form—here the nares are stopped up and pus is seen, but where it comes from may form the puzzle; and the differential diagnosis from accessory suppuration may require time and skill.

Before proceeding to the discussion on the empyemata, the question of polypi must be entered upon, and here is found ground on which the authorities are by no means unanimous. The old idea was that polypi grew as a result of catarrh and rhinitis, and that the accessory sinus empyemata depended upon them, due to the stoppage of their openings by the polypoid growths. The exact opposite view is now held by most observers—namely, that polypi are always secondary to some form of suppuration in the nose. Woakes holds that necrosis of the ethmoid—or, as he calls it, necrosing ethmoiditis—is at the root of recurrent polypi. Between these views lies a mean which seems to the writer to afford a reasonable explanation for the various forms and results often seen in cases of polypi.

It must be admitted by all workers in this region that many cases of polypi recur year by year until some one finds the empyema which lies at the root of the matter, and on the proper treatment of that sinus being carried out, polypi disappear from that case for ever. Again, Woakes is quite right in saying that necrosing ethmoiditis is a cause of polypi, and that nothing but removal of the diseased tissues will effect a cure, but that places us under no obligation to refuse to admit other causes as operative in the production of polypi.

Finally, some cases occur, and are indeed pleasant ones to treat, in which, on the removal of the polypi, the purulent discharge dries rapidly up, and the case is cured. How may this be explained? First, that there was no empyema, and that the polypi were due to inflammation in the nasal cavities themselves; this is certainly not a common form, but negative exclusion is a matter for careful thought before the law is laid down. Secondly, that a polypus was removed which lay in the opening of one of the accessory sinuses, and that in this way the opening of that sinus was rendered large and discharge easy, tending to rapid healing. The writer observed one case where this was evident; after removal of all the larger polypi pus was seen coming from under the anterior end of the middle turbinal. This portion of the turbinal was removed, and a small polypus taken out of the infundibulum, leading to rapid healing of the affected frontal sinus. Now, had this polypus been larger the snare might have caught it before localisation was possible, and its attachment made out, and the case might have been set down as one of polypi without complication, though in reality it was one in which the empyema healed rapidly when free drainage was established.

This now clears our way, so that we may turn our attention to the first half of the subject under consideration—namely, the suppurative diseases of the accessory sinuses, and before taking up the special cavities the general characteristics and signs common to all will be reviewed. The question of growths in these cavities will not be considered, as they are not within the scope of our inquiry.

1. As regards the ætiology of suppuration in the accessory sinuses no reason can usually be assigned why some cavities recover quickly after an acute rhinitis, and do not pass on into a purulent condition, while at other times the same cavities may thus become affected. The conclusion is forced upon us that individual idiosyncrasy and the potency of the bacterial invasion are the determining factors in settling whether a particular cavity shall become the seat of purulent discharge or not. Repeated colds in the head are undoubtedly the cause in some cases, others follow the acute infective fevers, while by far the greater number are set down as having commenced after or during an attack of influenza, and it is natural that this latter should be a frequent cause when it is taken into account what a virulent poison it is. One other cause must be mentioned—namely, polypi. This is often given by the older writers, who treated it as cause and effect, while nowadays, as mentioned above, the highest authorities consider that polypi, as a general rule, are the result of the constant flow of pus over the mucous membrane. Some few special causes may be enumerated:—Abscess at the root of a tooth bursting upwards into the antrum; various injuries to the face, causing wounds of the frontal sinus or maxillary antrum; a suppurating dental cyst in upper jaw may burst upwards.

2. *The Age of the Patient.*—There is absolutely no limit from the time of the formation of these cavities in infant and early life to ripe old age, but the second to the fourth decades are the periods in which these affections are most commonly met with.

3. The cavity most commonly affected is undoubtedly the

antrum, which, according to Werthein, in "Archiv für Laryngologie," Band II., 1900, is diseased in 47 per cent. of the total number of cases, the sphenoidal sinus coming next, then the frontal sinus, and last, the ethmoidal cells. The high place taken in this list by the sphenoidal sinus will doubtless be a surprise to many, and may be considered to be the cause of many of those incurable (so-called) catarrhs affecting the naso-pharynx.

4. *The Symptoms.*—These are various and far-reaching. Localisation by their means is rarely possible, as all these cavities are so near together that their symptoms are very much alike. The old idea of pain under the eyes denoting antral trouble, pain over the eye, frontal and occipital headache, or pain at the vertex—sphenoidal diseases—sounds very nice and looks very well on paper, but in practice rapidly shows itself to be entirely fallacious, and more likely to lead into error than to a correct diagnosis, though in acute cases it may help. Headache is by no means a common phenomenon of sinus disease, except with acute obstructed form, though heaviness and a feeling of tightness in the head is a constant accompaniment, especially noticeable in the morning on arising from bed. Tenderness over those cavities which can be palpated is fairly constant, but not invariable.

5. *Signs.*—Discharge from one side of the nose is the most constant. The exact localisation of the starting point of this determines, as a rule, the cavity affected.

The various forms of suppurative disease are acute and chronic. The acute may be divided into *open*, that is, where the normal opening of the accessory cavity is patent, and allows of the discharge of the secretion; and *closed*, or *occluded*, in which the normal opening is no longer patent, and the discharge cannot escape. As may easily be understood, this may be complete or partial, and the symptoms will vary accordingly. The chronic are also divisible into the same classes, the open being far the most common. Occlusion in a chronic empyema would rapidly produce pain, &c., just as in an acute, and if not relieved by natural or surgical means would of necessity lead to serious if not fatal consequences. With these few introductory remarks we may proceed to the consideration of the different cavities.

These are divided for clinical and diagnostic purposes into an anterior and posterior group. The anterior, including the antrum of Highmore, the frontal, the infundibuliform cells and the middle ethmoidal cells; the posterior, the posterior ethmoidal cells, and sphenoidal sinus.

The reason for this classification is that the openings of the anterior group are all below the middle turbinal, or. in other words, in the middle meatus; and pus from these cavities is seen in the middle meatus, between the middle turbinal and the lateral wall of the nose; while in the case of the posterior group their openings are above the middle turbinal and pus is seen descending between the middle turbinal and the septum, or, in other words, from the olfactory fissure. This, then, becomes the first step in the diagnosis—namely, to determine whether the pus originates above or below the middle turbinal body. This is done by wiping the nose quite clean and waiting to see where the pus shows again. Having definitely determined this point, we then know to which group our case belongs, and can proceed to differentiate between the cavities. Taking, first, the anterior group, as the antrum is the most common, our attention is naturally directed to it. An occluded antral suppuration is rare, and if present the thinnest wall would first bulge; that being the inner or nasal wall, a swelling in the middle meatus would be seen. This, combined with pain in infraorbital region, would lead one very near a correct diagnosis, and a puncture with a hollow needle in the inferior meatus would confirm our opinion.

The chronic open empyema is the common form, and a tabulated list of its symptoms will be the easiest to follow:—Pus from one side of nose, pus followed and seen coming from middle meatus, probably about half way back along the inferior turbinal; some tenderness over infraorbital region (doubtful), possibly bad teeth (uncertain); quantity of discharge large, and appearing in the morning after getting up, and on stooping the head forwards. Transillumination dark on affected side, brilliant but doubtful.

Experimental puncture (probe punction) through inferior meatus into cavity, and washing out with water after thorough cleansing of nose, certain and sure.

Acute frontal empyema is the most common form of the acute affection. In the occluded form the thinnest wall gives way first, and as this is the orbital, swelling and protrusion of the eye, with intense pain, are the most marked symptoms. In the open or only partially closed form the symptoms, in addition to those to be enumerated below under the chronic form, are—great frontal headache and heaviness, and tenderness on pressure upwards beneath the supra-orbital margin at its inner end.

The chronic open form of frontal empyema is best taken in conjunction with the anterior ethmoidal or infundibuliform cells, all of which open into the naso-frontal duct or infundibulum, and therefore are usually affected with the frontal.

The list of symptoms and signs is as follows:—

Pus from one side of nose, which, when followed up, is found to appear near anterior end of middle turbinal in middle meatus. Tenderness under supraorbital ridge, as mentioned above.

The diagnosis is confirmed by passing a probe into cavity, followed by a canula, and then washing out. This may be a very difficult task.

The third and last subdivision of the anterior group is the cells known as the middle ethmoidal. Their opening lies beneath the middle turbinal and somewhat above the level of the other two, midway between them, just above the bulla ethmoidalis. Its diagnosis depends upon the exclusion of the other two.

The second group of the accessory cavities, consisting of the posterior ethmoidal cells and sphenoidal sinus, contain, as has been mentioned above, the second most common sinus to be affected with a purulent discharge, and therefore deserves careful consideration, and cannot be committed to the realm of forgetfulness.

As has been seen above, the first diagnostic sign is pus seen in the interval between the middle turbinal and the septum, which, on being wiped away, appears shortly again, thus demonstrating that a collection of fluid is the source and not merely secretion from the nasal mucous membrane.

It is also sometimes possible to see the pus lying above the middle turbinal bone from behind. The further diagnosis of the case must be postponed until the nose has been cleared to some extent, as, though it is often possible to pass a probe into the sphenoidal sinus without having first removed the middle turbinal, it is difficult and often impossible to pass a canula and wash it out, which is the only infallible way of demonstrating which cavity is affected. This is a perfectly feasible and proper surgical procedure, and in patient hands gives good and satisfactory results.

As will easily be understood, a mere outline of the subject has been given, and no account of treatment, as that would have entailed too long a paper.

## ART. VI.—*Constitutio Lymphatica.*[a] By GEORGE PEACOCKE, M.D., F.R.C.P.I.; Assistant Physician, Adelaide Hospital, Dublin.

THE cause of sudden death in young children is, I venture to think, deserving of more attention than has hitherto been paid to it. It is not infrequently ascribed to convulsions, a convenient term no doubt, yet one which only describes a symptom of some morbid state—not the morbid state itself.

The object of my paper is to bring under your notice a condition that as yet has received little notice in this country, and which it is believed has often led to sudden death, especially in young children.

In the *New York Medical Journal* for July, 1897, appears an article from the pen of Dr. James Ewing, of New York, entitled "The Lymphatic Constitution and its relation to some forms of Sudden Death," in which the author says—"Under the term constitutio lymphatica have rather recently been described a series of cases presenting a characteristic hyperplasia of the lymph nodes, spleen, thymus, and often of the lymphoid marrow, associated with hypoplasia of the heart and aorta, and frequently also with rachitis. These pathological conditions have been found, especially in cases of sudden death, from a variety of causes, and are believed by many to indicate in these subjects diminished vital resistance and special liability to sudden cardiac paralysis."

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[a] Read before the Medical Section of the Royal Academy of Medicine in Ireland, on Friday, April 12, 1901.

Two cases of sudden and unexpected death had at the time come recently under Dr. Ewing's notice. The first was a girl, aged five years, whose family history revealed nothing of importance, except that a brother two years old showed evidence of some tonsillar enlargement, with symptoms of post-nasal adenoids, and also some enlargement of the cervical axillary and inguinal glands; otherwise the child appeared well and in good health.

The previous history was that of a perfectly healthy child, the fatal result occurring during chloroform anæsthesia for an incised wound of the tongue, the result of an accident.

The autopsy made, twenty hours after death, revealed the following conditions:—Heart normal in size, and containing dark fluid blood; aorta of normal size. Lungs—Blood contents considerable; some subplural ecchymosis; bronchi reddened. Thymus measured 7 × 5 × 2 c.m., and covered the upper third of pericardium; spleen slightly enlarged; Malpighian bodies extremely prominent, looking like large miliary tubercles; pulp hyperæmic. Stomach—The solitary follicles, especially about the pyloric end, distinctly visible. Intestine—Throughout the entire intestinal tract, especially in the ileum, the solitary follicles are very prominent; Peyer's patches enormously hypertrophic; the lower lenticular patches measure 11 to 9 c.m. in length, and the enlarged nodules of the lowermost patch appear as distinct polypoid outgrowths ½ c.m. high; the mesenteric nodes much hypertrophied, forming a solid mass of lymphoid tissue quite large enough to have been palpated through the abdominal walls; the tonsils moderately enlarged, but not hyperæmic; the bronchial nodes normal in size; the bone marrow was not examined; no evidence of rachitis; the brain appears normal; the microscopical examination showed hyperplasia of the lymphoid cells, and in the spleen a markedly increased deposit of pigment granules throughout the organ.

The second case was that of a female, aged 27, who died as the result of shock and hæmorrhage in the efforts to deliver a full-term child through a contracted pelvis. The only indications in this case of the constitutio lymphatica were the evidences of old rachitis, the hypoplasia of the heart and aorta, and the persistence of the thymus. It is, I think, doubtful if this case should be considered as indicating the presence of the lymphatic constitution, but Dr. Ewing states that the attending physicians were of opinion that the patient's death was inadequately explained by the shock and loss of blood, and the fatal termination was a matter of surprise.

My own observations include a series of four cases, each differing in some points from one another, but all showing a markedly abnormal state of the lymphoid tissue in various parts of the body, and in all cases death was sudden and unexpected.

Case I.—The first case was that of a child who was brought to the Adelaide Hospital in December, 1898. The parents asserted that the child was perfectly well going to bed the previous night, but that on waking in the morning they thought he "looked queer," and immediately carried him over to the hospital, where, on examination, it was found that life was extinct. The child seemed well nourished and cared for, and a very thorough *post-mortem* examination revealed only the following abnormal conditions:—The thymus seemed unusually large, but no exact measurements were made. The mesenteric glands were greatly enlarged. Peyer's patches were very distinct and swollen, and the solitary follicles throughout the entire intestinal tract were so prominent as to give the appearance of grains of sago closely set in the mucous membrane—this condition was most noticeable in the duodenum and jejunum.

Case II.—The second case was that of a boy aged 10 years; he had apparently not been in his usual health for a few days, but was not sufficiently unwell to seek medical advice; he was suddenly seized with an attack that was described as convulsions, and when brought to the Adelaide was found to be dead. The *post-mortem*, as in the previous case, showed that the boy was well cared for. There was slight congestion of one lung. The mesenteric glands were enlarged. Peyer's patches and the solitary follicles prominent and swollen. All the other organs healthy. There is no note taken of the condition of the thymus, so I presume it was, at any rate, not very large.

Case III.—The third case was that of a child who had been under the care of Dr. Beatty and Mr. Gordon for a nævus on the lower lip. Electrolysis had been used on several occasions under chloroform, and it is a matter of congratulation that the fatal result did not occur on any of these occasions, as death from chloroform narcosis is held to occur frequently in those who are subjects of the lymphatic constitution. In this case the child was, except for the nævus, an apparently healthy child, well nourished, in fact a rather large child, and was four months old. Death took place quite suddenly and from no apparent cause. The *post-mortem* made by Dr. J. Alfred Scott was most exhaustive. No enlarged superficial glands were noticeable. The heart was healthy. One lung showed some congestion, and there was one slightly enlarged bronchial gland. The thyroid and larynx were normal. The thymus measured four inches in length. The mesenteric glands were greatly enlarged. Peyer's patches were more prominent than normal, and the solitary follicles of the large intestines were distinctly enlarged, but not at all to the same extent as in the previous cases. The spleen was firm and somewhat increased in size, but the Malpighian corpuscles were not peculiarly prominent. The brain seemed perfectly healthy.

CASE IV.—The fourth and last case was that of a small, badly nourished child, nine months old, whom the mother said had been in his usual health until the day previous, when he seemed to have a slight cold and cough. On the day of his death he had been given his dinner of bacon and cabbage, and shortly afterwards was seized with some kind of fit, in which, according to the mother's account, his face became quite black. When brought to the hospital life was extinct. Dr. Alfred Scott also kindly performed a very thorough *post-mortem* in this case. The glands in the groin and axilla were considerably enlarged. The lungs showed a patch of congestion on each side. The bronchial glands were not enlarged. The thyroid and larynx appeared normal. The thymus measured three inches in length. The mesenteric glands were very much enlarged, but there was no evidence of any hyperlasia of the lymphoid structures in the intestine. The spleen was enlarged, and the Malpighian corpuscles were very well marked. The brain was not examined.

To recapitulate then the points of interest in these four cases:—

1. Up to the time of death the children were, to all appearances, healthy, or only suffering from some very trifling ailment.

2. Death was sudden and quite unexpected.

3. The *post-mortems* revealed no morbid appearance to account for death, except the changes already referred to as occurring in the parts of the body where lymphoid tissue is

formed—changes which are present in those who are subjects of the status lymphaticus.

Dr. Gunn very kindly made sections for me of the parts removed in Cases III. and IV., and he has handed me the following report:—

"Microscopic examination of practically all the organs prove all the organs normal, with the following exceptions:—The increased size of the solitary follicles and Peyer's patches in the intestines were due to an increase of adenoid tissue. The lymphatic glands show a simple hypertrophy, and the same condition is present in the thymus glands. The thyroid of Case III. is much infiltrated with round cells, probably inflammatory, the cells lying chiefly in the normal spaces of the gland. The spleen shows a very slight degree of increase of adenoid tissue. In Case IV. there is a marked increase of adenoid tissue in the spleen, where it has infiltrated the pulp to a large extent—no other marked change in any of the sections."

Since writing this paper another case bearing on the subject has come under my notice.

Case V.—A few days ago a boy, aged six years, was admitted to the Adelaide Hospital. He was suddenly taken ill in the morning, and his symptoms on admission—fever, headache, some irregularity of the pupils, and retraction of the head—suggested meningitis; he had also a discharge from the right ear. The possibility of pneumonia, owing to the great frequency of his respiration, was, however, also entertained. He rapidly grew worse, and death ensued within 24 hours of the time of the onset of the illness.

The following day I made a *post-mortem*, and found the brain perfectly healthy. On opening the thorax I was struck with the size of the thymus gland, and it occurred to me that possibly I might find further evidence of the lymphatic constitution. The lungs showed evidence of pneumonia. The lower lobe of the left lung was solid and airless, and there was a patch about the size of a walnut in the lower lobe of the right lung, also solid and airless. The heart seemed healthy. Examination of the abdomen revealed great enlargement of the mesenteric glands, the spleen did not seem affected, and the other organs, with the exception of the intestinal tract, appeared normal.

On opening the small intestine it was at once apparent that the adenoid tissue was abnormal in appearance, the solitary follicles were very much enlarged and prominent, and Peyer's patches were quite distinct and swollen. The solitary follicles of the large intestine were very distinct, but not so swollen as in the small intestine.

This case seems to me of very great interest. The cause of death was, no doubt, primarily pneumonia, but I think it is unusual for pneumonia to cause death within twenty-four hours in a young boy of six years of age, who was apparently otherwise healthy at the time. May it not be that he was the subject of lymphatism—the appearances at the *post-mortem* are very suggestive of this—and that thus his power of vital resistance being below the normal standard, he was unable to resist the sudden acute attack of pneumonia, and the slender thread of life was quickly snapt across.

In none of the English Text-books on Medicine that I am acquainted with, including Clifford Allbutt's great work, is this condition mentioned, with the solitary exception of Osler's Practice of Medicine, in the last edition of which an article is devoted to the subject. He mentions under the title Lymphatism the appearances that are usually found in such cases. The hyperplasia of the intestinal lymphatic structures, the moderate enlargement of the spleen with prominent Malpighian bodies, the enlarged thymus, hyperplasia of bone marrow, the yellow marrow of the long bones in young adults being often replaced by red, hypoplasia of heart and aorta, occasional enlargement of the thyroid with evidence of rickets. Of these pathological changes it would seem that the hyperplasia of the lymphatic structures is the most constant and essential characteristic, hypoplasia of the heart and aorta is frequently added, as is also the evidence of rickets and the enlargement of the thyroid.

As long ago as 1858 Friedleben denied that an enlarged thymus gland could produce fatal laryngismus either by direct pressure on the air passages or great vessels, or by reflex, cardiac, or respiratory paralysis arising from the thymus. Grawitz, Nordmann, and others maintained that such was the case, but Paltauf has clearly shown that some underlying constitutional defect must be assumed to exist in order to account for many sudden deaths usually referred to the pressure of an enlarged thymus upon the bronchi, great vessels, or pneumogastric. And further, an examination of the cases of "Thymus Tod," reported by earlier writers shows that in a majority of these cases it was noted that the tonsils, spleen, and lymphatic glands were more or less hypertrophic, though no particular significance was attached to this fact at the time.

What is the exact relation of hypoplasia of the heart and aorta to the lymphatic constitution is as yet not clearly known. Numerous writers, including Virchow, Rokitansky, Reigel, and Ortner, have published cases to show that subjects possessing this congenital defect in physical development present a diminished vital resistance, and apparently trifling causes have led to their sudden death.

As this abnormal state of the heart and aorta is certainly not present in all cases where sudden death has occurred, and where *post-mortem* evidence of hyperplasia of the lymphoid tissue has been found, it cannot be regarded as an essential factor in the production of the fatal termination.

The exciting causes and manner of death of the subjects of the lymphatic constitution that have been recorded include deaths under anæsthetics, after inoculation with anti-diphtheritic serum, and of persons who fell into the water accidentally or while bathing, and Escherich regards laryngismus stridulus as very probably associated with this condition.

Since it is claimed that many if not most of the deaths from chloroform anæsthesia administered by capable anæsthetists are referable to this condition, it becomes a matter of almost vital importance to be able to recognise it during life, but as yet we have no very sure data to accomplish this.

The physical signs indicative of hypoplasia of the heart and aorta are uncertain. Fraenkel mentions dilatation of the left ventricle with narrowed peripheral vessels and increased tension. Oertel has noticed an absence of aortic pulsation in the neck, which he regards as a pathognonomic sign if observed in a muscular subject, while others have laid stress on the infantile or defective development of other organs, especially the sexual organs.

Of far more importance is the discovery of a local or general hyperplasia of the lymphatic structures, enlargement of the superficial glands, hypertrophy of the tonsils with presence of post-nasal adenoids, signs of slight swelling of the thyroid, and dulness over the sternum, indicating a persistent or enlarged thymus, and in some cases the possible evidence gained by palpation of the enlarged mesenteric glands.

A careful examination of the blood in suspected cases may also be of service. Dr. Ewing mentions that he observed well-marked lymphocytosis in one of his cases, and though this condition has been frequently observed in early life, it has up to the present attracted little attention, nor, as far as I know, has it as yet acquired any significance.

Such is briefly our knowledge at the present time of this obscure condition.

My chief object in placing on record the cases which have come under my own notice is to stimulate others to research, and to urge the claims of the subject to more general attention.

Lymphatism may be the clue to many cases of sudden death that have occurred in the past and have seemed at the time inexplicable, and no one as yet can tell the interest and importance that may attach to it in the discussion of medico-legal questions in the future.

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## ASCITES IN CASES OF ADHERENT PERICARDIUM.

**Riesman** (*American Journal of the Medical Sciences*, July, 1901), in an interesting description of a case of primary tubercular pericarditis, emphasizes the fact that in cases of adherent pericardium ascites is usually noticed before the appearance of œdema of the lower extremities.

## ANEURYSMS OF THE HEART AND AORTA.

**Hektoen** (*American Journal of the Medical Sciences*, July, 1901), in an interesting article on aortic aneurysm, remarks that many so-called dissecting aneurysms of the heart take their origin in the beginning of the aorta. The author further states that the nearest approach at the present time to the truth in regard to syphilis and certain aortic lesions and aneurysms is embodied in the verdict, "guilty but not proven."

# PART II.

# REVIEWS AND BIBLIOGRAPHICAL NOTICES.

*Atlas of the Nervous System, including an Epitome of the Anatomy, Pathology, and Treatment.* By Dr. CHRISTFRIED JAKOB. Authorised Translation from Second Revised German Edition. Edited by EDWARD D. FISHER, M.D. With 112 coloured lithographic figures and 139 other illustrations, many of them in colours. Philadelphia and London: W. B. Saunders & Co. 1901. Pp. 218.

THIS volume, which is one of Saunders' Medical Hand Atlases, owes its value entirely to the illustrations, for in the 218 pages of letterpress, dealing as they do with the anatomy, macro- and microscopic, development, physiology, general and special pathology, symptomatology, and treatment of diseases of the nervous system, the matter is too condensed to be anything more than a sort of note-book, although for this it is by no means useless. Of the plates, however, we can speak only with the highest praise. There is at first a series of coloured plates showing different views of the hemispheres of the brain from the surface, and these are followed by others giving the appearances seen in the different stages of dissection. Opposite each plate is an outline sketch on which the names of the several parts are written. After this there are a number of plates containing photographic pictures of sections made through the brain and cord of the dog and of man, but not enlarged except on Plate 14, which gives sections of the human cord *in situ.*

The second part gives sections illustrating the development of the central nervous system, and its minute structure, showing the arrangement of the neurons, the structure of the grey cortex of the cerebrum and cerebellum, the position of the centres in the cortex, and the origins of the nerves in the medulla oblongata and spinal cord.

The third part, on the topographical anatomy of the nervous system, gives a series of beautifully executed figures of sections through the brain and cord, which are followed by a number of plates giving diagrammatic figures illustrating the course of the fibres.

The fourth part illustrates the pathologial anatomy of the brain, and the fifth part that of the cord. Many of these figures are photographic reproductions of sections; others are in colours.

On the whole there are 84 plates, beautifully drawn, and in the highest degree illustrative.

Such a work cannot fail to achieve a wide popularity, for to everyone engaged in the study of the nervous system, whether anatomist, physiologist, pathologist, physician, or surgeon, a collection of trustworthy drawings, so extensive, so accurate, and so compact and handy, will prove to be almost indispensable.

We would most cordially recommend this excellent little Atlas to the notice of all our readers.

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*Verhandlungen des Vereins für innere Medicin in Berlin. Herausgegeben von dem Vorstande des Vereins.* Jahrgang XX. 1900–1901. Berlin, 1901. Pp. 519.

This volume of the Proceedings of the Berlin Society for Internal Medicine contains many valuable papers and discussions, and furnishes ample evidence of the vigour and activity of the Society. It would, of course, be impossible to notice all the papers recorded in this volume. We can only indicate a few, taken at random, which will show the general character of the work done by the Society.

The cause of the peculiar staining properties of tubercle bacilli has been the subject of much discussion. As is known, when these organisms are stained by fuchsin or other dyes, they do not, like most bacilli, give up the stain to acids, and it is this property which enables them to be so easily detected in sputum, urine, &c. It has been supposed that this is due to the presence of fat, but Dr. C. Helbing shows that tubercle bacilli, completely freed from fat, still have the peculiar staining property, while other bacilli, artificially impregnated with fat, do not gain this power of staining. Fat, therefore, cannot be the cause. Chistin gives the reaction. The greater part of the body of the tubercle bacillus consists of chistin. It is from these facts concluded that the peculiar staining properties of the tubercle bacilli are due, not to fat, but to chistin (p. 60).

Professor A. Baginsky gives a very interesting description of the Limans, or salt lakes of Odessa, and of the system of mud, sand, and other baths used there, apparently with great success, in the treatment of tuberculous, rheumatic, and other forms of disease. The paper is illustrated with drawings of the establishment of baths, and of the numerous stages in the employment of the treatment (p. 139).

Dr. Auerbach records observations on the blood of typhoid patients. He inoculates flasks containing 300 cc. of ordinary meat bouillon with 10, 20, or 30 drops of blood taken, with antiseptic precautions, from the median vein. After, at most, 36 hours' incubation, typhoid bacilli could be shown in the culture. In this way, with scarcely more difficulty than by Widal's reaction, a positive diagnosis could be made within 36 hours. Out of ten clinically certain cases the bacillus was missed only three times, while in one clinically doubtful instance the diagnosis was made by cultivation of the blood (p. 218).

As is known, many researches have been made to discover the cause of rheumatic fever, but hitherto without much success. Dr. Fritz Meyer, having failed to detect specific organisms in the blood or joint effusion of rheumatic patients, undertook an examination of the throat, which is so often inflamed in this disease. From the exudation on the tonsils he succeeded in isolating a streptococcus, which does not exist in other forms of angina. This is minutely described, and its staining and cultural peculiarities are fully given. When this was injected into rabbits it did not produce suppuration at the point of inoculation, but induration and necrosis. After a few days, a sero-purulent exudation was effused into the joints. This effusion was sterile, and there was no sepsis, but pretty high fever. Inflammation of the serous membranes, with sterile effusion, occurred, and valvular endocarditis, partly warty, partly ulcerative. From the diseased endocardium in some cases the organism could be cultivated, and inoculation in fresh animals reproduced the same symptoms. This interesting paper gave rise to a prolonged discussion (p. 343), and called out, at a subsequent meeting, another paper on the same subject by Dr. Menzer, who had been working on the same lines as Meyer, but who appears still to feel great doubts as to the specificity of the streptococci which have been isolated from the tonsils of rheumatic patients. This communication also led to a discussion in which Litten, Meyer, and von Leyden spoke (p. 374). To anyone who takes an interest in the important subject of the ætiology of rheumatic fever these papers are to be recommended.

As an example of what surgery can now accomplish, Dr. Sarfert's paper "On the Operative Treatment of Pulmonary Consumption" is worthy of notice. He removes a large portion of the second rib, peels off the parietal pleura from the upper part of the wall of the thorax, turns out the apex of the lung, opens and plugs any cavities that can be felt, and then replaces the organ. For the details of the operation we must refer to the original. He actually performed this operation on a woman forty years of age without mishap. There was very little hæmorrhage, no difficulty in respiration, the caverns were easily found and opened, the wound granulated well, the hectic fever disappeared, the hæmoptysis never recurred, and after three months there was only a granulating wound an inch long, through whose centre a sinus an inch long led inwards. Unfortunately, two months later the woman died of acute pneumonia of the lower lobe of the opposite lung. The apex of the right lung, which had been operated on, was changed into a mass of dense connective tissue. The remainder of the lung was crepitant, and contained only very few tubercular masses, none of which were softened. The left lower lobe was in the condition of pneumonic engorgement (*Stadium der blutigen Anschoppung*) (p. 265).

The great value of the detection of elastic fibres in the sputum is recognised. There are, however, difficulties to be met with, particularly when the disease in the lungs is recent. Dr. L. Michaelis describes a new method for the examination, founded on an extensive research on the behaviour of elastic tissue when treated with different staining fluids (p. 471).

In conclusion, we would congratulate the society on the amount and value of the work which is being accomplished by its members.

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*Aphorisms, Definitions, Reflections, and Paradoxes, Medical, Surgical and Dietetic.* By A. RABAGLIATI, M.A., M.D., F.R.C.S. Ed.; late President of the Leeds and West Riding Medico-Chirurgical Society, &c. London, Paris and Madrid: Baillière, Tindall & Cox. 1901.

THESE sententious statements embody the conclusions that Dr. Rabagliati arrived at on medical questions after years of extensive practice. His views on medical therapeusis gradually crystallised into this form. The advisableness or otherwise of these pithy sentences being the most suitable for conveying information is open to doubt. In their favour may be quoted the example of Hippocrates, who had a host of imitators—not one of whom is now read; even those of the great Boerhaave, that once were taught in every school in Europe, are now not even read, except by some Teufelsdorch. We fear that those of Hippocrates are equally neglected.

Aphorisms and Definitions are not well calculated to show the many sides of truth. Illumined by the light of genius they make the truth clear, and yet they seem never to do more than show one side. They have the great advantage of sticking in the memory, which of itself is helpful, for it is better to have some proper idea than none at all. But in medicine half-truths are dangerous; the whole truth may not be ours on any medical problem, but it is our duty to seek it.

We read the book with attention and with benefit. The life experience of an accomplished physician and accurate observer cannot fail in being helpful. But at times we could not suppress the feeling that our author was a bit garrulous, and it took some determination to get over the long series of reflections. There are few who can read the unabridged diary of the gossiping Pepys, bright as it is with his vivacity and the pen portraits of the Court personages.

Dr. Rabagliati's views are, although put in this unappetising way, well worthy of consideration. He thinks that many of our common ailments are the result of careless living—eating for pleasure rather than for sustenance. And he says, with much force, that when we are so particular as to the hygiene of our dwellings we might be more careful than we are about the hygiene of our tissues. To understand the author's views the book should be read, and we may add that, agree or disagree with the author as we may, the book is worth reading.

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*Chloroform: A Manual for Students and Practitioners.* By EDWARD LAWRIE, M.B. Edin.; M.R.C.S. Eng.; Lieutenant-Colonel, I.M.S.; Residency Surgeon, Hyderabad; Principal of the Hyderabad Medical School and Lecturer on Surgery; Surgeon-Superintendent of the Afzulgunj Hospital. London: J. & A. Churchill. 1901.

THIS great book is not a contribution to the war of words that for years has been waged over the merits of the different anæsthetic agents. It is in no way a controversial volume, but a plain statement of observed phenomena during a long series of scientific experiments—experiments well adapted for their purpose, and carried out with the skill begotten of years of practice. On the lessons of these experiments Dr. Lawrie bases his method of administering chloroform, and his preference for that anæsthetic. The author has, we think rightly, given an account of his earlier attempts to discover the physiological action of chloroform, and the sequence of its toxic effects when lethal doses were given. These studies were undertaken to satisfy himself as to the best and safest anæsthetic for the hundreds that sought relief in the Afzulgunj Hospital.

He had, as a student, seen the Edinburgh surgeons use chloroform daily without producing any unpleasant effect, and naturally came to adopt the drug as his general anæsthetic. In time the value of the drug came to be questioned, and Dr. Lawrie properly determined, by suitable experiments, to examine for himself the accuracy of the statements made as to the lethal properties of the drug.

The first question that called for notice was the finding of the Committee of the Royal Medico-Chirurgical Society of 1864. The conclusion that chloroform primarily affects the heart, arrived at by the Committee, seems to have influenced all subsequent investigators in Great Britain, and was fruitful for evil, and as we read the evidence today so we cannot say it was warranted.

The British Medical Association, in 1879, undertook the task of investigation, and issued a report which may be said to have died in birth; so quickly did it pass into oblivion that few members of the Medical Profession even know of its having existed.

All this time Dr. Lawrie was carrying out, successfully, the Edinburgh method of chloroformisation with unfailing success in Hyderabad, where he found results the opposite of those obtained in England. To further test the matter, he commenced a fresh series of experiments on apes and monkeys—animals much better suited for the purpose than those employed elsewhere—and again he found his experiments gave different results to those performed by other experimenters in England. The generous liberality of His Highness the Nizam of Hyderabad now allowed of a European scientist being brought over to watch the experiments. The choice of a suitable person was left to the *Lancet*, and Sir Lauder Brunton was chosen. His scientific training, his long familiarity with physiological experiments on the lower animals, his knowledge of the action of drugs, and his European reputation fully justified the choice Every member of the Medical Profession felt satisfied that in his hands due caution in arriving at any conclusion would be exercised, and his familiarity with such class of experiments as were contemplated could be trusted to take all the necessary precautions to eliminate all possible source of error.

The result was awaited for with anxiety, and it fully confirmed Dr. Lawrie's previous experiments and conclusions. Briefly told, the Commission proved that the normal fall of the blood presure produced by chloroform is harmless, and cannot, therefore, be due to weakening of the heart. Indeed, the author had found, from years of experience, and tens of thousands of cases, that chloroform can be used with perfect safety as an anæsthetic, provided that the breathing is properly looked after, and death can take place only from over-dosing.

In 1894, the whole question having been entrusted to Drs. Gaskell and Shore by the Nizam's Government, the "cross-circulation" report was given to the profession, and discussed at a meeting of the Royal Medico-Chirurgical Society. At the meeting Drs. Shore and Gaskell impugned the accuracy of Dr. Lawrie's observations, and held that chloroform directly acted on the heart. In the July of that year, however, Dr. W. A. Gaskell wrote to Dr. Lawrie telling him that a *post-mortem* examination of the dog, experimented on, showed that the vessels had not been properly ligatured: "so that the injection was able to pass both into the vertebral and into the arm of that side."

The Hyderabad cross-circulation experiments thus remain as the standard physiological experiments on the subject, and they show, beyond all shadow of doubt, that chloroform has no direct action on the heart.

Dr. Lawrie has been so successful as a physiological experimenter with chloroform that members of the Medical Profession appear to forget that he is a busy and skilful operator. From 1892 to October, 1900, there were 17,300 operations performed in the Afzulgunj Hospital under chloroform. During ten years there was an accidental death from over-dosage with chloroform. This experience corresponds with that of military surgeons who freely used chloroform as an anæsthetic in the Crimean War, the Indian Mutiny, the American Civil War, the Franco-German War and the Turko-Russian War.

We think that every anæsthetist should read, and indeed study, the account of Dr. Lawrie's experiments on chloroform, which are the most complete and valuable as yet made.

*Anatomical Atlas of Obstetrics, with Special Reference to Diagnosis and Treatment.* By DR. OSCAR SCHAEFFER, Privatdocent in Obstetrics and Gynæcology in the University of Heidelberg. Authorised Translation from the Second Revised German Edition. Edited by J. CLIFTON EDGAR, A.M., M.D.; Professor of Obstetrics and Clinical Midwifery in the Cornell University Medical College, &c. With 122 Figures on 56 Lithographic Plates, and 38 other Illustrations. London and Philadelphia: Saunders & Co. 1901. Pp. 315.

*Atlas and Epitome of Labour and Operative Obstetrics.* By DR. OSCAR SCHAEFFER, Privatdocent in Obstetrics and Gynæcologyin the University of Heidelberg. Authorised Translation from the Fifth Revised German Edition. Edited by J. CLIFTON EDGAR, A.M., M.D., &c., &c. With 14 Lithographic Plates in Colours, and 139 other Illustrations. London and Philadelphia: Saunders & Co. 1901. Pp. 112.

A SHORT time ago we had to congratulate Messrs. Saunders on being the publishers of Professor Schaeffer's "Atlas of Gynæcology." Now we must repeat our congratulations on the production of the two excellent Atlases of Obstetrics which are before us. The reaction from the blacks and whites of our British medical works to the gorgeous colouring of these Atlases is at first apt to produce the same confusing effect upon the eye that the change from the, alas, too often incorrect anatomical relations of English text-books to the almost perfect exactitude of the German produces on the mind. Once, however, the eye becomes accustomed to Dr. Schaeffer's colouring, we readily appreciate what an assistance such drawings are to the student. We suggested once before in these columns that London publishers should have a general holocaust of all incorrect and worthless blocks, which had been handed on from one generation of text-books to another. The works before us make us long to take part in such a good deed, even to the extent of a preliminary robbery. No jury would convict us of theft when it was explained to them that the deed was necessary in order to prevent the complete extension of

German superiority. They would rather convict the publishers on the ground of criminal stupidity for not having destroyed the blocks of their own accord.

One fault Professor Schaeffer's Atlases possess. Their name, and the extent and number of the illustrations, are apt to lead one to suppose that they are merely "Atlases," whereas the truth really is that as well as being atlases they are also concise and modern epitomes of obstetrics.

*Uterine Fibromyomata: their Pathology, Diagnosis, and Treatment.* By E. STANMORE BISHOP, F.R.C.S. Eng.; President, Manchester Clinical Society; Fellow of the British Gynæcological Society; Honorary Surgeon, Ancoats Hospital, Manchester, &c. With 49 Illustrations. London: Rebman, Limited. 1901. Pp. xii. and 323.

WE must congratulate Mr. Stanmore Bishop most heartily on the work which he has given to the medical world. His book constitutes a clearly-written and correct monograph on the life-history and treatment of fibromyomata. It is not encumbered with incorrect statistics, and it is not unmeaningly hostile to modern advances. Consequently, we do not think that we are incorrect in saying that it is one of the most valuable English works on a gynæcological subject which has appeared for some time. After some excellent introductory chapters on the symptomatology, diagnosis, and anatomy of myomata, there is a good and impartial review of surgical treatment. Mr. Bishop's remarks in this chapter on the conservative attitude of English surgeons, particularly as shown by the number of years they took to abandon the operation of extra-peritoneal hysterectomy, furnish interesting reading. In the early nineties Smyly and Jessett had performed complete hysterectomy with marked success. The operation had been long performed on the Continent, and its superiority to the extra-peritoneal method clearly shown. Yet in 1898 a list of the "more recent cases," operated on by Bantock, showed that in 32 operations for myomata he had performed extra-peritoneal hysterectomy 17 times. And, we may add, in 1901 an English handbook on the "Diseases of Women" considers it necessary to state that there is a growing feeling in favour of the intra-peritoneal, as compared with the extra-peritoneal, operation. It is curious that it should not be sufficient to prove to an English gynæcologist that a new operation has been introduced which gives better results than the old operation which it replaces, but that he must literally be forced into adopting an improvement.

The chapter on the *technique* of operative methods is, perhaps, the best in the book. The author has attempted to make it "as complete as possible, giving, so far as can be done, the original directions of each operator." The result is a most readable and useful chapter.

We notice one omission of importance. There does not appear to be any list of, or discussion on, the indications for operative interference. This is a serious omission, and one which Mr. Bishop should remedy when he brings out a new edition.

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*The Commonwealth of Cells.* Some Popular Essays on Human Physiology. By H. G. F. SPURRELL, B.A. London: Baillière, Tindall, & Cox. 1901. Pp. 115.

THIS book consists of an introduction, five chapters, each of which is styled an essay, and a concluding chapter, not so styled. The titles of the five essays are—I. Living Matter; II. The Chemistry of the Body; III. The Mechanics and Physics of the Body; IV. The Nervous System; and V. The Body. The whole forms a fairly systematic treatise on physiology, and it must be admitted that the author has fully accomplished his object, which, he tells us, has been "to present the fundamental principles of physiology in a brief, consecutive, and readable form." The work is eminently readable and full of suggestive ideas. We are inclined to think, however, that it will be more appreciated by those who have than by those who have not read the text-books. To the absolute beginner much of its suggestiveness will be lost, and he may be induced to take up ideas which he will possibly find later want a very firm foundation in experiment, for

Mr. Spurrell admits that in his efforts to be up to date he he has outstripped the text-books. But to one who has already a fair knowledge of physiology as a whole, these essays will be found full of charm, and not only pleasant but instructive reading.

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*Year Book of the Scientific and Learned Societies of Great Britain and Ireland.* Comprising Lists of Papers read during 1899, before Societies engaged in Fourteen Departments of Research, with the Names of their Authors. Compiled from Official Sources. Seventeenth Annual Issue. London: Charles Griffin and Company, Limited. 1900.

THE seventeen years during which this great Annual has appeared have proved its worth. To scientists it is of great value; they, by reference to its pages, see the direction in which science is progressing, the lines of research, and can in each succeeding volume mark the progress.

To-day no science is isolated, and medicine less so than any other, all the collateral sciences contribute to medical progress. We are glad to see that the present volume bears evidence that the members of the Medical Profession utilise to the fullest every advantage that progress places before them. How much good work is being done is duly recorded in this useful Annual.

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*Burdett's Hospitals and Charities*, 1901. Being the Year Book of Philanthropy and the Hospital Annual. By SIR HENRY BURDETT, K.C.B. London: The Scientific Press (Limited). 1901. 8vo. Pp. 1,071.

SETTING to one side a very manifest tendency on the part of the author to blow his own horn as the Patron Saint of Hospitals, Asylums, Nursing Institutions, and Medical Charities in general, we have again to express our sense of the usefulness and completeness of the "hardy annual" before us. It is really a most painstaking compilation, and contains a vast mine of information on everything that pertains to hospital finance, management, and statistics.

We wish the author, for his own sake, could be induced to omit from his title page the two inverted pyramids which disfigure it, and next time to write a less egotistical preface.

It is to be regretted that so many Dublin institutions are marked with the prefixed asterisk which denotes that "no return has been received this year, although repeated applications for information have been made." The said institutions are Jervis-street Hospital, the Mater Misericordiæ, St. Vincent's, and the Children's Hospital, Temple-street.

On the other hand, the accounts of the following hospitals, denoted by a cross prefixed, are analysed in the introductory chapters: The Adelaide Hospital, the Fever Hospital and House of Recovery, Cork-street, the Meath Hospital and County Dublin Infirmary, the Royal Victoria Eye and Ear Infirmary, and the Rotunda Hospital. On page 571 the City of Dublin Hospital should be the "Royal City of Dublin Hospital."

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*The Students' Manual of Venereal Diseases.* By F. R. STURGIS, M.D., and FOLLEN CABOT, M.D. Seventh Edition. London: Rebman. 1901. 8vo. Pp. 216.

THIS manual of venereal diseases has reached its seventh edition, which the author presents to the profession, revised, and in part re-written by himself and Follen Cabot, M.D., Instructor in Genito-Urinary and Venereal Diseases in the Cornell University.

The original object of the author in writing this book was to teach the students of the Medical Department of the University of the City of New York, and in publishing their revised edition Drs. Sturgis and Follen Cabot dedicate their work to the medical students of the United States.

The volume is admirably brought out, well indexed, and forms a useful, concise treatise upon venereal diseases well adapted for the use of students and general practitioners, while it is not embellished with the superfluous, and often shocking, illustrations which render many of the recent works upon this subject doubtful acquisitions to the private library of either a student or a practitioner.

The authors may be congratulated upon having accomplished their object in producing, in a concise form, a book on venereal diseases sufficiently ample to assist the student and general practitioner to recognise and distinguish the principal phases of these diseases, and to guide them in their treatment, and we feel sure their work will be rewarded by the approval it so justly deserves.

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*The Extra Pharmacopœia.* By WILLIAM MARTINDALE, F.L.S., F.C.S., late President and Examiner of the Pharmaceutical Society; and W. WYNN WESTCOTT, M.B. Lond., D.P.H., H.M.'s Coroner for North-East London. Tenth Edition. London: H. K. Lewis. 1901. Med. 24mo. Pp. xxxii. + 688.

ALTHOUGH in a sense "Martindale's Extra Pharmacopœia"—as this most useful and handy volume is called—lies outside the Reviewer's sphere, yet this tenth edition calls for special notice.

The authors have once more endeavoured—and not in vain—to give their readers a fair review of the state of Pharmacy and Therapeutics at the present time. In their Preface they point out that since the publication of the last British Pharmacopœia in 1898, some notable additions have been made to current pharmacological literature. An Indian and Colonial Addendum to the British Pharmacopœia itself has appeared. A new edition of the Pharmacopœia Germanica has been published, as well as a Supplement to the Austrian Pharmacopœia. A revision of the Formulary of the British Pharmaceutical Conference has been issued, and most of the London Hospitals have revised their Pharmacopœias in accordance with their official work of 1898. All these important publications have been laid under contribution in the preparation of the Tenth Edition of the Extra Pharmacopœia, and the result is eminently satisfactory.

The chief features of this new edition are noted in the very admirable, scientific, and instructive Preface, which is dated April 29th, 1901.

The authors point out that, though the dream of Hoffman to produce quinine synthetically from a coal tar derivative has not been realised, yet several antipyretics have been obtained from such a source, while some synthetic local anæsthetics have been able to compete with cocaïn. Euphthalmine also competes with the alkaloids of vegetable origin for producing mydriasis. It is defined as "the hydrochloride of *n*-Methyl-vinyl-diacetone-alkamine (a mandelic acid derivative.")

Allusion is made to the anæsthetic properties of ethyl chloride, locally in dental practice especially, but also generally when administered by means of a suitable mask.

Under the heading "Aperients" reference is made to an agreeable combination described as elixir or syrup of figs. The formula will be found at page 224. Griping is effectually prevented by the addition of such carminatives and antiseptics as oil of cloves, oil of peppermint, chloroform, and alcohol.

Among counter-irritants is now included *Mylabris phalerata*, a blistering fly from the East, rich in cantharidin.

We observe several novel preparations of bismuth, such as the benzoate, oxybromide, "phosphate" (the composition of which is supposed to be bismuth phosphate with an admixture of sodium pyrophosphate), sulphocarbolate, sulphocyanide, and a sedative mixture suggested by the British Pharmaceutical Conference.

In ophthalmic surgery the authors apparently highly approve castor oil as a solvent of the alkaloids atropin, atroscin (a crystallisable alkaloid derived from *Hyoscyamus niger* and different species of *Scopula*, of the N. O. *Solanaceæ*, found very useful as a mydriatic), cocaïn, duboisin, gelsemin, homatropin, hyoscin, hyoscyamin, physostigmin, pilocarpin, and scopolamin.

The authors, referring to the treatment of pulmonary consumption, say that the treatments by arsenic and cacodyle compounds of Hoff and Gautier seem to be giving satisfactory results.

In the treatment of syphilis calcium iodate is mentioned as a substitute for iodoform in the *Lancet* (Vol. II. for 1900, page 1867). Internally it plays the part of an intestinal antiseptic. For syphilis also the following uncommon mercurial preparations are recommended—"hyrgol," a water-soluble quicksilver, containing between 73 and 80 per cent. of mercury, also called *Hydrargyrum colloidale;* hydriodol, an oily solution of mercuric iodide; and mercuriol or mercuramalgam worn in a sachet.

The last-named is an amalgam of aluminium, magnesium and mercury—the strength as regards mercury being 40 per cent. It is an amorphous powder from which the mercury volatililes under the combined influences of warmth, air, and moisture. Hence its use carried in a sachet.

Mercurol, a nuclein compound of mercury, is used in urethral diseases, especially gonorrhœa, but also in non-specific urethritis. It has also of late been used as an antiseptic in disease of the nose and ear. It is employed in a solution of one-half to two per cent. as an injection in gonorrhœa.

The sections of the book on antitoxins, serums, vaccines, and animal organopathy have been revised with care—in this the authors have been assisted by Dr. Sims Woodhead. A new section devoted to analytical memoranda, containing the revised chemical tests, bacteriological notes, microscopic methods, and modes of preparation of sterile culture media, has been contributed by Mr. W. Harrison Martindale, Ph.D. Marburg, who has aided in producing this edition of the Extra Pharmacopœia.

The Indian and Colonial Addendum to the British Pharmacopœia, produced in the autumn of last year, is a collated Summary of the remedies used in the Colonies, but more particularly in India, which have not previously found official recognition. The intention of this addendum to the pharmacopœia, which now becomes an Imperial work, is twofold. First, it is desired to develop the therapeutic resources of the various dependencies of the British Empire. Next, it is suggested that preparations of these lately-official drugs may be prescribed as substitutes for those hitherto official.

We quite agree with the authors in regarding such suggestions of "alternative substances" to the prescriber even, as "a dangerous innovation." The authors also seem to us to criticise very rightly the laxity—from a scientific standpoint—which characterises the Addendum. They say—"Many of the pharmaceutical processes in this Addendum appear not to have been tested practically."

We have thought it well worth while to give the foregoing tolerably full account of the new edition of "Martindale's Extra Pharmacopœia," for we look upon it as a well of information on therapeutics as well as on pharmacology. It is a volume which no sound medical practitioner—be he physician or surgeon—can afford to be without.

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*Operative and Inoperative Tumours of the Bladder.* A Clinical Operative Study, based on 500 cases. By E. HURRY FENWICK, F.R.C.S., Surgeon to the London Hospital; Surgeon and Pathologist to St. Peter's Hospital for Urinary Diseases. London: J. & A. Churchill. 1901. Pp. 115.

RECENTLY we had the pleasure of reviewing a monograph from the pen of Mr. Hurry Fenwick "On Ulceration of the Urinary Bladder," giving his conclusions from a large clinical experience and careful observation extending over a considerable number of years. In the present monograph we have the author's experience of over fifteen years' study and observation of a much rarer form of disease of the urinary bladder—viz., tumours. It is refreshing to find a really practical detail of an extensive clinical experience such as the author in the present monograph has given. His classification is the simplest—

I. The Benign Villus—covered Growth.
II. The Malignant Villus—covered Growth.
III. The "Bald" Malignant Growth. This latter is the epithelioma which rapidly infiltrates the bladder wall, but whose surface is uncovered by villus processes.

The little volume is divided into four chapters.

Chapter I. is devoted to Cystoscopic Technique. Important rules are also given for the examination of tumours of the bladder, the first of which is one to be remembered—viz., "Always cystoscope, never sound for symptomless hæmaturia."

Chapter II. is on the Division of Vesical Tumours, their clinical history, cystoscopic appearances, and the position of operative interference of the benign group.

Chapter III. deals with the Villus-covered Malignant Growth and its clinical history.

Chapter IV. describes the "Bald" Malignant Growth, and gives a good account of operative interference of vesical tumours in general. In this latter connection important guiding lines are submitted.

To this is added an appendix—*A.* "On the Caisson in Bladder Surgery"; *B.* "A List of 135 Operations."

The little volume is that of a practical surgeon. No less than 39 illustrations lend additional value to the text. The book is deserving of careful study, and we recommend its perusal to every surgeon.

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*Stricture of the Urethra and Hypertrophy of the Prostate.* By P. J. FREYER, M.A., M.D., M.Ch.; Surgeon to St. Peter's Hospital; Lieut.-Colonel Indian Medical Service (retired). London: Baillière, Tindall & Cox. 1901. Pp. 115.

THIS little volume consists of a reprint of six lectures delivered by the author last November at the Medical Graduates' College and Polyclinic, and published in the *Lancet* and *Clinical Journal.*

The first three lectures are devoted to Stricture of the Urethra, and its Treatment; while the last three deal with Enlargement of the Prostate, its Complications, and Treatment. "Is stricture capable of permanent cure?" is a question of great importance. To this the author gives the answer, "Yes, emphatically." While there are many surgeons who will admit that, if the treatment is properly carried out, much is done towards permanent cure, and many who will hesitate to reject such an emphatic answer as that of the author, who gives it as the result of his own experience, still, we believe, there are many surgeons who would as emphatically answer "No."

The reader will find much sound advice on these subjects, and the time spent in reading the lectures will be well repaid.

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*The Edinburgh Medical Journal.* Edited by G. A. GIBSON, M.D., F.R.C.P. Ed. New Series. Vol. IX. Edinburgh and London: Young J. Pentland. 1901. 8vo. Pp. viii. + 616.

FOR the ninth time it is our pleasant duty to compliment Dr. Gibson upon the success of his editorial labours. This volume of the *Edinburgh Medical Journal* rivals its predecessors in point of interest as well as of merit.

The first original communication on "The Borderland," is from the pen of Dr. G. W. Balfour, LL.D., Consulting Physician to the Royal Infirmary. This article consists of the Morison Lectures for 1900, delivered at the Royal College of Physicians of Edinburgh, on December 4th and 11th, 1900. The subject is a deeply interesting one, and is handled most ably by the author.

There are in all twenty-seven original communications in this volume, which, as usual, is well brought out by Messrs. Young J. Pentland of Edinburgh and London.

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## ACCIDENTAL WOUNDING OF THE LATERAL SINUS AND VENTRICLE.

KEEN (*American Journal of the Medical Sciences*, July, 1901), in an article describing several operations for traumatic epilepsy in which he injured the lateral sinus, comments on the apparent harmlessness of the accident. No untoward results were noticed in any of the cases in which it occurred. He operated on one case in which a piece of bone embedded in the cerebral substance had escaped detection. The author also reports two cases in which the lateral ventricle was injured during operation for traumatic epilepsy. Notwithstanding the escape of large quantities of cerebro-spinal fluid, no harmful consequences ensued.

# PART III.

# MEDICAL MISCELLANY.

*Reports, Transactions, and Scientific Intelligence.*

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—**Lombe Atthill**, M.D., F.R.C.P.I.
General Secretary—**John B. Story**, M.B., F.R.C.S.I.

## SECTION OF MEDICINE.

President—**Sir Christopher J. Nixon**, M.D.
Sectional Secretary—**R. Travers Smith**, M.D.

*Friday, April 12, 1901.*

**Sir George Duffey** in the Chair.

### *Notes on Some Stomach Cases—Effects of Chronic Ulcer.*

**Dr. William Calwell** (Belfast) read notes of cases showing the effects produced by chronic gastric ulcer. [His paper was published in the number of this Journal for May, 1901. See Volume CXI., No. 353, Third Series, page 335.]

**Professor McWeeney** said for the last year or so he had tested the vomit from suspected cases of gastric cancer for hydrochloric acid in the Mater Hospital, and the indication given by its absence was, in the main, found to be correct. Originally he had placed no faith in this test, but his recent experience induced him to alter that opinion. He referred in these remarks to matter taken from the stomach as a result of a test meal.

**Dr. Parsons** said the first case by Dr. Calwell recalled to him the first case of perforation coming under his immediate care. The patient was a nurse, and had been suffering for some years previously from gastric symptoms, and it was thought probable that she had anorexia nervosa, which diagnosis was supported by the fact that she obtained considerable relief from the use of certain coal-tar derivatives, more especially antipyrin. She had never suffered from hæmatemesis, and though she had a good deal of pain it did not interfere with her duties. Operation was performed soon after perforation, and she died in about six days. At the operation they found a dense ring of induration round the margin of the perforation, and the ligatures cut through, so that they could not close the opening, and finally the stomach had to be stitched to the anterior abdominal wall. If one found, in addition to diminished hepatic dulness and collapse, a pulse steadily increasing in frequency, he looked upon the last as a danger-signal in cases of suspected perforation. With regard to the third group, with pyloric obstruction, he had some experience of those cases, and one of the first he had met was that of a woman who had had an abscess opened previously in the 7th intercostal space, but whether the pus came from above or below the diaphragm the surgeon was unable to decide. She came to him afterwards with dilatation of the stomach, and he could feel a large dense mass in the right hypochondriac region. The presence of hydrochloric acid in the vomit led him to conclude that there was cicatricial contraction, and that the large mass was a mass of fibrous tissue. A gastro-enterostomy was performed by Mr. Croly, but death ensued. An autopsy confirmed the diagnosis, the fibrous tissue completely occluding the pylorus, so that a No. 12 catheter could with difficulty be admitted. On the subject of Professor McWeeney's remarks he (Dr. Parsons) found an absence of hydrochloric acid in many non-malignant cases, and he recalled one case in particular in which the patient, a girl, died of Addison's disease. He considered, however, that its presence was of greater diagnostic value, as he had never found it present in the case of cancer, except once, and that was a very doubtful case.

Dr. W. J. Thompson said that last year he brought forward a case in which there were all the symptoms of acute perforating gastric ulcer, but on operation there was no sign of gastric ulcer to be found. A case came under his care about two weeks ago, in which the patient, prior to the last attack, showed no symptoms of gastric disturbance, and still on operating a large perforating ulcer was found. The patient was a blacksmith, thirty-five years old, who had been previously strong and healthy. On leaving work in the evening he was attacked with a sudden pain over the region of the appendix, which became worse during the night, and in the morning he was suffering from well-marked peritonitis and pain, particularly over the region of the appendix. He stated that he never had gastric disturbance, and that the only thing he used to suffer from was constipation. On operation the appendix was found to be perfectly healthy, but there was a large perforating gastric ulcer. He died two days afterwards. The ulcer seemed to him to be due to an embolus or thrombus.

**Sir John W. Moore** said he was attending a middle-aged gentleman about six months ago who had all the symptoms of ulceration, at all events of the duodenum, if not of the stomach. The diagnosis which he had arrived at was that he had a peptic ulcer. An eminent consultant remarked to him that this patient was doomed, as he heard that he had carcinoma of the stomach. The patient was now better, and was out working in his garden, and progressing fairly well. He was, therefore, sceptical about the diagnosis of carcinoma, considering, further, that this diagnosis was made twenty years ago, and that there was plenty of hydrochloric acid in the vomit.

**Dr. Calwell**, replying, said he had not dealt with the diagnosis, as it did not come under the heading of his paper. As far as his experience went, hydrochloric acid was absent in cases of cancer. With regard to the increasing pulse rate in perforation, one of his patients had a pulse of 80 for two or three days, which was confusing, but other symptoms, especially the expression, convinced him of the fact of perforation.

*Short Notes on a Series of Unusual Cases of Pulmonary Disease.*

**Dr. James A. Lindsay** (Belfast) read some notes on above. The cases included three cases of malignant disease of the lungs; two cases of pyo-pneumothorax, with broncho-pleural fistula; a case of pneumonia, with delay of crisis until the 20th day, followed by recovery; and a case of plastic bronchitis.

[His paper will be found in the number of this Journal for May, 1901. Vol. CXI., No. 353, New Series, page 321.]

**Sir George Duffey** said the last case (plastic bronchitis) was very rare. He knew only one such case, in a relative of his, and the first symptom was hæmoptysis coming on suddenly.

**Sir J. W. Moore** and **Dr. Travers Smith** also spoke.

**Dr. Dempsey** had a few cases lately bearing on this subject. One of them was an ordinary well-marked pneumonia occurring in a healthy adult. It was an apex pneumonia, strictly limited to the upper lobe. On the 8th day a typical crisis occurred, the temperature remaining down for 1 day, going up again for 3 days, and falling on the 11th. It rose again on the 12th day, and remained up for 2 or 3 days, and about the 18th day became normal. At present he had a patient, a woman of about forty-eight years, and of a rather myxœdematous appearance, with a tumour in the abdomen—he was inclined to think in the colon or omentum. The upper lobe of her left lung was absolutely solid, the breathing over it being faintly tubular. There was no pain, no hæmoptysis, but a little mucoid expectoration. He was not certain that the abdominal lump was malignant, but from appearances he thought so, and, therefore, he concluded that the lung was also malignant. The peculiar way it mapped out the upper lobe was remarkable. There were no pressure symptoms. In a recent case of pyopneumothorax the patient expectorated a large quantity of pus, and was now at his business, and doing fairly well.

**Dr. Doyle** had three cases of malignant disease of the lungs, one at present. In all of them extension had taken place from the breast. In the present case there was no hæmoptysis and very little expectoration, but marked pain.

**Dr. Lindsay** replied.

The Section then adjourned.

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### ENDOTHELIOMA OF DURA MATER.

**Brower and Wells** (*American Journal of the Medical Sciences*, July, 1901) state that endotheliomata of the dura mater are usually benign in character. They describe an interesting case of this nature in which the tumour remained quiescent for many years.

### GONORRHŒAL MYOSITIS.

**Ware** (*American Journal of the Medical Sciences*, July, 1901) reports an interesting case of gonorrhœal myositis, the fourth on record. The gonococcus was found in the muscle tissue. He thinks the condition is often overlooked or its ætiology misunderstood.

### ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH, AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

A special examination for the Diploma in Public Health was held in Edinburgh in June, and the following candidates having passed the First and Second Examinations, received the Diploma in Public Health:—Mrs. Euphemia Stoker, L.R.C.P. & S.E., Sheffield; Major Robert Caldwell, F.R.C.S. Eng., R.A.M.C.; George Melville, M.B., C.M., Penicuik; and James Sinclair Tait, F.R.C.S.E., St. John's, Newfoundland.

# SANITARY AND METEOROLOGICAL NOTES.

Compiled by SIR J. W. MOORE, B.A., M.D. Univ. Dubl.; F.R.C.P.I.; F. R. Met. Soc.;
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

## VITAL STATISTICS

*For four weeks ending Saturday, June* 15, 1901.

## IRELAND.

### TWENTY-THREE TOWN DISTRICTS.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending June 15, 1901, in the Dublin registration area and the twenty-two principal provincial urban districts of Ireland was 19·8 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,079,708. The deaths registered in each of the four weeks ended Saturday, June 15, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

| Towns, &c. | Week ending | | | | Average Rate for 4 weeks | Towns, &c. | Week ending | | | | Average Rate for 4 weeks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | May 25 | June 1 | June 8 | June 15 | | | May 25 | June 1 | June 8 | June 15 | |
| 22 Town Districts | 21·8 | 20·9 | 19·0 | 19·8 | 20·4 | Lisburn - | 4·6 | 27·3 | 22·8 | 4·6 | 14·8 |
| Armagh - | 0·0 | 20·7 | 13·8 | 41·3 | 19·0 | Londonderry | 18·3 | 18·3 | 20·9 | 15·7 | 18·3 |
| Ballymena | 14·4 | 28·8 | 9·6 | 14·4 | 16·8 | Lurgan - | 13·3 | 17·7 | 13·3 | 4·4 | 12·2 |
| Belfast - | 23·0 | 20·8 | 20·4 | 21·4 | 21·4 | Newry - | 8·3 | 8·3 | 16·6 | 33·1 | 16·6 |
| Clonmel - | 10·2 | 25·5 | 10·2 | 25·5 | 17·9 | Newtownards | 17·2 | 28·6 | 17·2 | 22·9 | 21·5 |
| Cork - | 22·6 | 28·8 | 20·6 | 17·8 | 22·5 | Portadown - | 26·0 | 5·2 | 24·0 | 5·2 | 15·1 |
| Drogheda - | 16·3 | 20·4 | 16·3 | 12·3 | 16·3 | Queenstown | 19·8 | 13·2 | 19·8 | 46·3 | 24·8 |
| Dublin - (Reg. Area) | 24·3 | 21·3 | 20·0 | 19·6 | 21·3 | Sligo - | 19·2 | 14·4 | 4·8 | 24·0 | 15·6 |
| Dundalk - | 12·0 | 16·0 | 4·0 | 20·0 | 13·0 | Tralee - | 26·6 | 21·3 | 21·3 | 31·9 | 25·3 |
| Galway - | 23·3 | 23·3 | 7·8 | 23·3 | 19·4 | Waterford - | 17·5 | 15·6 | 5·8 | 11·7 | 12·7 |
| Kilkenny - | 9·9 | 29·8 | 24·8 | 19·9 | 21·1 | Wexford - | 23·4 | 23·4 | 32·7 | 23·4 | 25·7 |
| Limerick - | 20·5 | 12·3 | 13·7 | 13·7 | 15·1 | | | | | | |

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases registered in the 23 districts during the week ended Saturday, June 15, were equal to an annual rate of 2·2 per 1,000—the rates varying from 0·0 in seventeen of the districts to 5·3 in Tralee. Among the 144 deaths from all causes registered in Belfast are 12 from measles, 6 from whooping-cough, one from diphtheria, one from ill-defined fever, 8 from enteric fever, and 5 from diarrhœa.

## DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of the Area, estimated to the middle of 1901, is 375,076, being made up of the following:—City, 290,837; Rathmines, 32,589; Pembroke, 25,563; Blackrock, 8,727; and Kingstown, 17,360.

In the Dublin Registration Area the births registered during the week ended Saturday, June 15, amounted to 198—107 boys and 91 girls; and the deaths to 148—78 males and 70 females.

### DEATHS.

The deaths, which are 16 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 20·6 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the area, the rate was 19·6 per 1,000.

Ten deaths from zymotic diseases were registered during the week. This figure is 2 below the number registered in the preceding week, and 9 below the average for the corresponding period of the past 10 years. They consist of 4 deaths from diarrhœa, 3 from whooping-cough, one from influenza, one from enteric fever, and one from cerebro-spinal meningitis.

Tubercular disease caused 36 deaths—viz., 28 from pulmonary tuberculosis, 2 from tubercular meningitis, 2 from tabes mesenterica, and 4 from other forms of the disease.

Diseases of the respiratory system caused 25 deaths, including 10 from bronchitis, 12 from pneumonia, and one from pleurisy. This number is 7 below that of the preceding week, but one above the average for the corresponding period of the past 10 years.

Five deaths were registered as being caused by convulsions—one an infant under one month, and 4 between one month and one year.

There was one death from apoplexy. There were 2 deaths from epilepsy, and 7 from other diseases of the brain and nervous system (exclusive of convulsions). Diseases of the circulatory system caused 18 deaths.

Cancer caused 4 deaths.

Five accidental deaths and 2 deaths from suicide were registered.

In 12 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 9 infants under one year old and the deaths of 2 persons aged 60 years and upwards.

Thirty-four of the persons whose deaths were registered during the week were under 5 years of age (27 being infants under one year, of whom 10 were under one month old) and 41 were aged 60 years and upwards, including 19 persons aged 70 and upwards, of whom 4 were octogenarians.

## STATE OF INFECTIOUS DISEASE IN DUBLIN.

### (1.) Cases of Infectious Diseases Notified to the Public Health Committee of the Corporation.

Sir Charles Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of Infectious Diseases in the City of Dublin, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | |
|---|---|---|
| Week ending | May 25, 1901 ... ... | 64 cases. |
| „ | June 1, „ ... ... | 50 cases. |
| „ | June 8, „ ... ... | 54 cases. |
| „ | June 15, „ ... ... | 38 cases. |

Of the 38 cases notified during the last week of the period, 11 were erysipelas, 9 enteric fever, 6 scarlatina, 6 measles, one German measles, 4 diphtheria, and one membranous croup.

### (2.) Cases of Infectious Diseases in Rathmines Urban District.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | | |
|---|---|---|---|
| Week ending | May 25, 1901 | ... ... | 5 cases. |
| „ | June 1, „ | ... ... | 4 cases. |
| „ | June 8, „ | ... ... | 1 case. |
| „ | June 15, „ | ... ... | 4 cases. |

Of the 4 cases notified in the last week named, one was scarlet fever, one continued fever, and 2 were enteric fever.

### (3.) Cases of Infectious Diseases in Pembroke Urban District.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Pembroke, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | | |
|---|---|---|---|
| Week ending | May 25, 1901 | ... ... | 9 cases. |
| „ | June 1, „ | ... ... | 12 cases. |
| „ | June 8, „ | ... ... | 2 cases. |
| „ | June 15, „ | ... ... | 14 cases. |

Of the 14 cases notified in the last of the above weeks, one was diphtheria, one measles, and 12 were whooping-cough.

### (4.) Cases of Infectious Diseases under Treatment in Dublin Hospitals.

Six cases of enteric fever were admitted to hospital during the week ended June 15, 1901, 5 cases were discharged, one died, and 30 cases remained under treatment at the close of the week.

Four cases of diphtheria were admitted to hospital, 2 cases were discharged, and 18 cases remained under treatment at the close of the week.

Thirteen cases of scarlatina were admitted to hospital, 17 were discharged, and 77 cases remained under treatment at the close of the week. This number is exclusive of 19 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Two cases of measles were admitted to hospital, 6 cases were discharged, and 22 cases remained under treatment at the close of the week.

There was one case of typhus fever under treatment.

In addition to the above-mentioned zymotic diseases recognised as such, 9 cases of pneumonia were admitted to hospital, 15 cases were discharged, one case died, and 26 cases remained under treatment at the close of the week.

## STATE OF INFECTIOUS DISEASE IN BELFAST.

Dr. Whitaker, Superintendent Medical Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | | |
|---|---|---|---|
| Week ending May 25, 1901 | ... | ... | 103 cases. |
| " June 1, " | ... | ... | 80 cases. |
| " June 8, " | ... | ... | 118 cases. |
| " June 15, " | ... | ... | 149 cases. |

Of the 149 cases notified in the last of the four weeks, 90 were enteric fever, 11 erysipelas, 5 diphtheria, 34 continued fever, one puerperal fever, 6 scarlet fever, and 2 membranous croup.

## ENGLAND AND SCOTLAND.

The mortality during the week ended Saturday, June 15, in thirty-three large English towns, including London (in which the rate was 13·7), was equal to an average annual death-rate of 14·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 16·9 per 1,000, the rate for Glasgow being 17·8, and for Edinburgh 17·2.

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## VITAL STATISTICS

*For four weeks ending Saturday, July* 13, 1901.

## IRELAND.

### TWENTY-TWO TOWN DISTRICTS.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending July 13, 1901, in the Dublin registration area and the twenty-two principal provincial urban districts of Ireland was 19·4 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,079,708. The deaths registered in each of the four weeks ended Saturday, July 13, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000:—

| Towns, &c. | Weeks ending | | | | Average Rate for 4 weeks | Towns, &c. | Weeks ending | | | | Average Rate for 4 weeks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | June 22 | June 29 | July 6 | July 13 | | | June 22 | June 29 | July 6 | July 13 | |
| 22 Town Districts | 19·6 | 21·0 | 19·1 | 19·4 | 19·8 | Lisburn - | 27·3 | 18·2 | 4·6 | 9·1 | 14·8 |
| Armagh - | 13·8 | 20·7 | 13·8 | 13·8 | 15·5 | Londonderry | 13·1 | 27·5 | 18·3 | 14·4 | 18·3 |
| Ballymena | 9·6 | 28·8 | 14·4 | 14·4 | 16·8 | Lurgan - | 13·3 | 26·6 | 31·0 | 8·9 | 19·9 |
| Belfast - | 21·1 | 23·2 | 20·2 | 21·4 | 21·5 | Newry - | 16·6 | 4·1 | 0·0 | 0·0 | 5·2 |
| Clonmel - | 0·0 | 20·4 | 5·1 | 20·4 | 11·5 | Newtownards | 28·6 | 11·4 | 5·7 | 22·9 | 17·2 |
| Cork - | 16·5 | 24·0 | 26·1 | 17·8 | 21·1 | Portadown | 5·2 | 5·2 | 20·8 | 0·0 | 7·8 |
| Drogheda - | 36·8 | 12·3 | 12·3 | 28·6 | 22·5 | Queenstown | 26·4 | 13·2 | 26·4 | 19·8 | 21·5 |
| Dublin - (Reg. Area) | 20·2 | 18·2 | 20·7 | 21·0 | 20·0 | Sligo - | 38·4 | 38·4 | 14·4 | 4·8 | 24·0 |
| Dundalk - | 23·9 | 0·0 | 4·0 | 12·0 | 10·0 | Tralee - | 5·3 | 10·6 | 26·6 | 10·6 | 13·3 |
| Galway - | 7·8 | 27·2 | 7·8 | 3·9 | 11·7 | Waterford | 13·6 | 13·6 | 5·8 | 21·4 | 13·6 |
| Kilkenny - | 24·8 | 19·9 | 24·8 | 19·9 | 22·4 | Wexford - | 28·0 | 14·0 | 9·3 | 28·0 | 19·8 |
| Limerick - | 17·8 | 38·3 | 15·1 | 19·2 | 22·6 | | | | | | |

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases registered in the 22 districts during the week ended Saturday, July 13, were equal to an annual rate of 2·0 per 1,000—the rates varying from 0·0 in seventeen of the districts to 5·7 in Newtownards. Among the 144 deaths from all causes registered in Belfast are 12 from measles, 3 from whooping-cough, 10 from enteric fever, and 4 from diarrhœa.

## DUBLIN REGISTRATION AREA.

In the Dublin Registration Area the Births registered during the week ended Saturday, July 13, amounted to 192—100 boys and 92 girls; and the deaths 157—80 males and 77 females.

### DEATHS.

The deaths, which are 10 above the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21·8 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the area, the rate was 21·0 per 1,000. During the twenty-eight weeks ending with Saturday, July 13, the death-rate averaged 28·6.

There were 14 deaths from zymotic diseases. This number is 5 below the average for the corresponding period of the past 10 years, and includes 4 deaths from whooping-cough, 4 deaths from diarrhœa, and one death each from diphtheria, scarlatina, and influenza.

Tubercular disease caused 38 deaths—25 deaths from pulmonary tuberculosis, 4 deaths each from tabes mesenterica and tubercular meningitis, and 5 deaths from other forms of the disease.

There were 21 deaths from diseases of the respiratory system. Of these 10 were caused by bronchitis, 8 by pneumonia, and one by croup. The total is equal to the average for the corresponding period of the past 10 years.

Four deaths were caused by cancer.

Five deaths were caused by convulsions. Of these 2 were under one month, 2 were over one month but under one year, and one was between the age of one and 5 years.

There was one death from apoplexy, and 13 deaths from other diseases of the brain and nervous system (exclusive of convulsions) were registered. Diseases of the circulatory system caused 16 deaths.

There were 2 deaths from accidental violence.

In 8 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases were all of infants under one year old.

Forty-two of the persons whose deaths were registered during the week were under 5 years of age (28 being infants under one year, of whom 9 were under one month old) and 32 were aged 60 years and upwards, including 13 persons aged 70 and upwards, of whom 6 were octogenarians, and one (a woman) was stated to have been aged 91 years.

## STATE OF INFECTIOUS DISEASE IN DUBLIN.

### (1) Cases of Infectious Diseases Notified to the Public Health Committee of the Corporation.

Sir Charles Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of Infectious Diseases in the City of Dublin, notified under "The Infectious Diseases (Notification) Act, 1899," as follows:—

| | | |
|---|---|---|
| Week ending June 22 | ... ... | 44 cases. |
| „ June 29 | ... ... | 41 „ |
| „ July 6 | ... ... | 70 „ |
| „ July 13 | ... ... | 41 „ |

Of the 41 cases notified in the last week of the period, 15 were erysipelas, 5 enteric fever, 8 scarlatina, 3 measles, 3 German measles, 5 diphtheria, and 2 continued fever.

### (2) CASES OF INFECTIOUS DISEASES IN RATHMINES URBAN DISTRICT.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | |
|---|---|---|
| Week ending June 22 | ... ... | 5 cases. |
| „ June 29 | ... ... | 7 „ |
| „ July 6 | ... ... | 7 „ |
| „ July 13 | .. ... | 1 case. |

The one case notified in the last week was scarlet fever.

### (3) CASES OF INFECTIOUS DISEASES IN PEMBROKE URBAN DISTRICT.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1899," as follows:—

| | | |
|---|---|---|
| Week ending June 22 | ... ... | 7 cases. |
| „ June 29 | ... ... | 6 „ |
| „ July 6 | ... ... | 21 „ |
| „ July 13 | ... ... | 5 „ |

Of the 5 cases notified in the last week, one was erysipelas, one scarlet fever, and 3 whooping-cough.

### (4) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Three cases of enteric fever were admitted to hospital during the week ended July 13, 1901; 3 cases were discharged, and 17 cases remained under treatment at the close of the week.

Three cases of diphtheria were admitted to hospital, 5 cases were discharged, one died, and 19 remained under treatment at the close of the week.

Fifteen cases of scarlatina were admitted to hospital, 7 cases were discharged, one died, and 67 remained under treatment at the close of the week. This number is exclusive of 13 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

No admission from measles or typhus fever occurred; 14 cases of the former disease, and one of the latter remained under treatment.

In addition to the above-named zymotic diseases recognised as such, 10 cases of pneumonia were admitted to hospital; 14 were discharged, one died, and 32 cases remained under treatment at the close of the week.

## STATE OF INFECTIOUS DISEASE IN BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | |
|---|---|---|
| Week ending June 22 | ... ... | 152 cases. |
| „ June 29 | ... ... | 207 „ |
| „ July 6 | ... ... | 153 „ |
| „ July 13 | ... ... | 128 „ |

Of the 128 cases notified in the last week, 89 were enteric fever, 10 erysipelas, 3 diphtheria, 24 continued fever, and 2 scarlet fever.

## ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, July 13, in 33 large English towns, including London (in which the rate was 14·2), was equal to an average annual death-rate of 15·6 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 17·2 per 1,000, the rate for Glasgow being also 17·2, and for Edinburgh 15·0.

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## METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat.* 53° 20, *N., Long.* 6° 15′ *W., for the Month of June,* 1901.

| | |
|---|---|
| Mean Height of Barometer, - - - | 30·036 inches. |
| Maximal Height of Barometer (25th, at 9 p.m.), | 30·485 „ |
| Minimal Height of Barometer (22nd, at 9 p.m.), | 29·477 „ |
| Mean Dry-bulb Temperature, - - | 56·1°. |
| Mean Wet-bulb Temperature, - - | 51·7°. |
| Mean Dew-point Temperature, - - | 47·4°. |

| | |
|---|---|
| Mean Elastic Force (Tension) of Aqueous Vapour, | ·329 inch. |
| Mean Humidity, | 73·5 per cent. |
| Highest Temperature in Shade (on 29th), | 71·6°. |
| Lowest Temperature in Shade (on 18th), | 42·6°. |
| Lowest Temperature on Grass (Radiation) (18th), | 37·8°. |
| Mean Amount of Cloud, | 59·0 per cent. |
| Rainfall (on 13 days), | 1·628 inches. |
| Greatest Daily Rainfall (on 22nd). | ·712 inch. |
| General Directions of Wind, | N.W., E.N.E. |

### *Remarks.*

Although not so fine, sunny, and dry as May, June, 1901, was a favourable month. The mean temperature, rainfall, and number of rainy days were all somewhat below the average, and the wind still clung to the colder points of the compass, especially N.W. and E.N.E. In and near Dublin there was a complete absence of thunder and lightning. The rainfalls were not heavy, except on the 22nd, when the measurement amounted to upwards of an inch at some stations near Dublin, and to ·712 inch in the city itself. As compared with May, there was a great falling off in the estimated amount of bright sunshine from 302¼ hours to 173¼ hours. It is, therefore, not to be wondered at that the percentage of cloud rose from 33·1 in May to 59·0 in June.

In Dublin the arithmetical mean temperature (56·9°) was below the average (57·8°) by 0·9°; the mean dry-bulb readings at 9 a.m. and 9 p.m. were 56·1°. In the thirty-six years ending with 1900, June was coldest in 1882 (M. T.=55·8°), and in 1879 ("the cold year") (M. T.=55·9°). It was warmest in 1887 (M. T.=62·3°); in 1896 (M. T.=61·4°); and in 1899 (M. T.=61·3°).

The mean height of the barometer was 30·036 inches, or 0·119 inch above the corrected average value for June—namely, 29·917 inches. The mercury rose to 30·485 inches at 9 p.m. of the 25th, and fell to 29·477 inches at 9 p.m. of the 22nd. The observed range of atmospheric pressure was, therefore, 1·008 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 56·1°, or 2·7° above the corresponding M. T. for May, 1901. Using the formula, *Mean Temp.=Min.* + (*Max.* — *Min.* × ·465), the value was 56·4°, or 0·8 below the average mean temperature for June, calculated in the same way, in the twenty-five years, 1865–89, inclusive (57·2°). The arithmetical mean of the maximal and minimal readings was 56·9°, compared with a twenty-five years' average of 57·8°. On the 29th the thermometer in the screen rose to 71·6°—wind, E.; on the 18th the temperature fell to 42·6°—wind, N.E. The minimum on the grass was 37·8° on the 18th.

The rainfall amounted to 1·628 inches on 13 days. The average rainfall for June in the twenty-five years, 1865–1889, inclusive, was 1·817 inches, and the average number of rainy days was 13·8. The rainfall, therefore, and the rainy days were slightly below the average. In 1878 the rainfall in June was very large—5·058 inches on 19 days; in 1879, also, 4·046 inches fell on 24 days. On the other hand, in 1889, only ·100 inch was measured on 6 days. In 1887 the rainfall was only ·252 inch, distributed over 5 days. In 1900, 3·169 inches fell on as many as 22 days.

High winds were noted on 12 days, and the force of a gale was attained on the 13th and 23rd. The atmosphere was foggy on the 22nd. A solar halo was seen on the 28th. Temperature reached or exceeded 70° in the screen on only one day—the 29th—compared with 17 days in 1887, only 2 days in 1900, and 14 days in 1899. There were no electrical disturbances.

The rainfall in Dublin during the six months ending June 30th amounted to 9·352 inches on 80 days, compared with 13·090 inches on 114 days in 1900, 11·295 inches on 95 days in 1899, 12·115 inches on 98 days in 1898, 13·950 inches on 113 days in 1897, 7·854 inches on 84 days in 1896, 12·282 inches on 80 days in 1895, 14·361 inches on 109 days in 1894, 9·624 inches on 78 days in 1893, 11·770 inches on 97 days in 1892, only 6·741 inches on 67 days in 1887, and a twenty-five years' average of 12·313 inches on 95·4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 2·465 inches on only 10 days. Of this quantity 1·090 inches fell on the 22nd. The total fall since January 1 has been 13·670 inches on 75 days, compared with 18·191 inches on 105 days in the first six months of 1900, 19·510 inches on 95 days in those of 1899, 13·500 inches on 88 days in those of 1898, 18·125 inches on 106 days in those of 1897, 7·356 inches on 61 days in the same period of 1896, 14·270 inches on 67 days in 1895, 17·381 inches on 96 days in 1894, and 11·776 inches on 75 days in 1893.

The rainfall at Cloneevin, Killiney, Co. Dublin, amounted to 1·92 inches on 13 days. The greatest fall in 24 hours was 1·00 inch on the 22nd. The average rainfall for June in the 16 years, 1885–1900, was 1·785 inches on 13 days. In 1897, 3·59 inches fell on 20 days; in 1898, 2·03 inches fell on 15 days; in 1899, 2·47 inches fell on 10 days; and in 1900, 2·29 inches on 23 days. Since January 1st, 1901, 10·74 inches of rain have fallen at this station on 82 days, compared with 13·10 inches on 97 days in the corresponding six months of 1898, 13·62 inches on 89 days in the first half of 1899, and 13·82 inches on 113 days in that of 1900.

Dr. B. H. Steede reports that at the National Hospital for Consumption, Newcastle, County Wicklow, the rainfall was 2·276 inches on 10 days, compared with 2·149 inches on 22 days in 1900, 3·748 inches on 8 days in 1899, 2·459 inches on 14 days in 1898, and 4·078 inches on 15 days in 1897. On the 22nd, 1·260 inches were measured. The maximum temperature in the shade was 69·5° on the 29th, the minimum temperature in the shade was 42·5° on the 13th. At this station the rainfall for the six months ending June 30 amounted to 11·539 inches on 75 days, compared with 16·904 inches on 103 days in the first six months of 1900, 18·639 inches on 91 days in the first six months of 1899, 14·918 inches on 88 days in the same period of 1898, and 18·372 inches on 102 days in that of 1897.

At the Railway Hotel, Recess, Connemara, Co. Galway, the rainfall was 5·222 inches on 17 days. In June, 1900, it had been as much as 7·676 inches on 22 days. The measurement on the 18th amounted to 2·150 inches. There were wet periods from the 1st to the 4th, the 9th to the 14th, and the 18th to the 23rd. Between these rainy periods the weather was delightful.

Dr. Arthur S. Goff reports the rainfall at Lynton, Dundrum, Co. Dublin, as 1·71 inches on 13 days, the greatest daily rainfall being ·88 inch on the 22nd. The mean shade temperature was 57·2°. The thermometric range was from 43° on the 7th to 71° on the 26th.

Mr. H. A. Cosgrave, M.A., returns the rainfall in June at Broomfield, Howth, at 2·04 inches.

# PERISCOPE.

### TREATMENT OF ABSCESS OF LUNGS.

**Dr. James Bell** describes (*Montreal Medical Journal*, May, 1901) three cases of abscess of the lung he treated by operation. He concludes:—"The abscesses in each case followed a pneumonia, and, judging from the symptoms, probably began as a local gangrene of lung tissue. As one would expect, the abscess communicated with the bronchi, with the result that evacuations of horribly foul-smelling pus, at first more or less intermittent, occurred, and continued until the cavity was drained. In each case there was considerable difficulty about the anæsthetic, and in the case exhibited to-night general anæsthesia was impossible on account of the filling of the bronchi with pus which interfered with the breathing, and produced violent spasms of coughing. In this case the attempt to administer ether, which was only maintained for a few minutes, kept the patient in a condition of semi-asphyxia and violent coughing for most of the afternoon. In each case the lung was firmly adherent to the chest wall, making the operation almost as simple as that for empyema, and finally the results of draining the cavities were most satisfactory. Localisation of the abscesses alone was difficult, the aspirating needle failing to give evidence of pus, even when it had undoubtedly entered the cavity. This is easily understood when one considers that such a cavity is necessarily at times more or less completely emptied by a fit of coughing, and that its contents are, moreover, thick and viscid, containing generally much mucus and some shreddy material (gangrenous lung tissue), especially if the case is a comparatively recent one."

### SUPERNUMERARY URETER.

**Scudder** (*American Journal of the Medical Seiences*, July, 1901) describes a case of supernumerary ureter ending blindly, causing acute abdominal symptoms in a child aged twenty months. This is only the ninth recorded case.

### TREATMENT OF MUSCULAR DYSTROPHY.

**Sachs and Brooks** (*American Journal of the Medical Sciences*, July, 1901) think that much can be done to record the progress of cases of muscular dystrophy. They report several cases in which great benefit accrued from systematic muscular exercises.

# THE DUBLIN JOURNAL

OF

# MEDICAL SCIENCE.

SEPTEMBER 2, 1901.

## PART I.

## ORIGINAL COMMUNICATIONS.

◆

ART. VII.—*The Influence of Food on the Excretion of Acetone.*[a] Deduced from experiments on my own person. By DR. F. SCHUMAN-LECLERCQ, Bath Physician in Carlsbad.

ONE of the most interesting questions at the present time is as to what is the source of acetone in the body; hence the very numerous investigations which have of late been carried on upon this subject. Inasmuch, however, as the pathology of human metabolism is concerned, only such experiments as have been tried on man can be considered as having any real importance. Thus the following series of somewhat extensive metabolistic researches made on the healthy subject will be all the more welcome since the comparison is made between the healthy and the sick man, which will be more profitable for elucidating such matters than any conclusions drawn from experimental research on animals.

It does not seem to me that there is any occasion to give here an historic review of the investigations which have been pursued on acetone, or to give a sketch of the various theories held concerning it. The excellent publications of the last few years—Rosenfeld (8), Hirschfeld (2),

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[a] Translated by the author from his original communication, published in the Wiener Klinische Wochenschrift, No. 10, 1901.

Leo Schwarz (9), Geelmuyden (1), J. Müller (6), Waldvogel (10), and Magnus Levy (5)—give all the needed information on the subject, and this in such a concise form that I need only write a few words to elucidate fully my tables.

The experimental reserches of Leo Schwarz (9), Geelmuyden (1), Magnus Levy (5), laid down the improbability of albumen being the source of acetone. Geelmuyden (1) observed a slight increase of the acetone excretion after food rich in fat. Schwarz (9), in a longer series of experiments made on diabetic patients, always found a distinct increase of the acetone excretion after the introduction of fat. The results, however, which this same author obtained on healthy individuals were not constant. It was, therefore, necessary to institute a series of experiments on the healthy man under a varying diet. In the following paper I report two series of experiments (made on my own person) upon the bearing of alimentation on the excretion of acetone in the healthy man, which I was allowed to pursue at the Municipal Chemical Laboratory of the Sprudel Salt Works, thanks to the courtesy of Mr. Sipoecz, Ph.D., the Director of that Institution. In my first series (in the winter of 1899) I intended at first to investigate where acetone was formed; but when some results of this work (Table I.) did not in every instance corroborate the experience of those authors, and when the more exact investigations of Leo Schwarz (9) were published, who pointed out the importance of considering the acetone of the breath, as did also Geelmuyden (1) and J. Müller (6), I resolved to repeat the work next winter, and to specifically determine this time also the exhalation of acetone by the breath, with the view of controlling the accuracy of my results obtained in the winter before. By publishing both tables I intend to point out, by their comparison, the importance of determining in any experiments the acetone in the breath, because it brings prominently forward the fact that nothing but wrong conclusions can be drawn if the determination of acetone in the urine is relied upon alone.

Table I. (1899) and Table II. (1900) comprise a period of more than 100 days, and represent strict experiments on my own person. Many side issues have been considered in them, and care has been taken in regard to the food, which has been weighed regularly, except in unimportant instances. The analyses were made on the collected urine, and both the acetone and the total nitrogen were each determined by two parallel quantitative tests. All details of my daily life, such as exercise, rest, sleep, were as regular as clockwork. The urine was examined daily for diacetic acid with Gerhardt's reaction (sesquichloride of iron), and repeatedly for sugar. It was always free from both. This reaction, as we know from Hirschfeld (2) and Magnus Levy (5), is manifest only when the acetone excretion reaches a high value, not less than 0·35 grammes pro mille. This quantity I reached on one day only (second fasting day, December 10, Table II.), and even then neither diacetic acid nor beta-oxybutyric acid was present.

The determination of the acetone in the urine was made according to Messinger's method, adapted for the urine by Huppert (double distillation), while the total nitrogen was determined according to Kjeldahl's method.

The order of the experiments for the first year, Table I., was as follows:—After a period of mixed diet for 13 days, I placed myself at once on an exclusive meat diet with as large quantities of meat as possible, the raw weight of which had been ascertained (up to 2 kilos of meat), and after a week of this *régime* a meat *régime* of a definite weight (1,000 grammes) was adopted. For this purpose 1,500 grammes of raw meat were reduced to 1,000 by the removal of all visible connective tissue, fat, ligament, sinew, &c. This quantity was adopted as the normal daily fare. It was simmered gently in a hermetically sealed saucepan every evening, and taken the next day for the three meals, warmed up. Except for some unsweetened black coffee for breakfast and weak tea in the afternoon, and water *ad libitum*, nothing else was taken which is not mentioned in the table. Concerning the quantity of water I did not feel compelled to observe any restriction, all the more as the meat was at times so tough that it had to be minced, salted, and occasionally moderately peppered so as to render it palatable. Naturally my thirst varied accordingly.

After having thus kept to a meat diet for 25 days, during 18 of which I used the constant quantity of 1,000 grammes, I fed myself for one day exclusively on great quantities of butter (600 grammes), and then, after a period of 6 days of mixed diet, which I gave myself as a rest, I kept to a fat diet for 5 days, sometimes with and sometimes without carbohydrates, and on the last day of this period I took a small quantity of meat. This fat period was preceded by one day of absolute fasting.

The total phosphoric acid, as well as the acidity (bihydrate phosphate), the total sulphuric acid and the nitrogen (in Table II., also the ethereal sulphates), were determined because acetone, beta-oxybutyric acid and diacetic acid have been regarded, as is known, as the products of the albuminous exchange in the organism, and their amount was believed to be in a direct ratio with nitrogenous excretion, and because acetone is said to be found regularly, in addition to the many fatty acids, among the direct oxidative products of albuminous transformation. (It ought to be observed, however, that this latter point has not yet been undoubtedly confirmed; quite recently Blumenthal[a] and Neuberg stated that they succeeded in obtaining acetone under a very slow oxidation of the albuminous bodies, by means of hydrogen-dioxide and iron-salts. Leo Schwarz (9), who was not able to obtain acetone from albumen by means of permanganate of potassium, contests the conclusiveness of that statement.) For this reason I carefully sought for the volatile fatty acids during 8 days, but with no result whatsoever. Owing to the fact that my various analyses necessitated the greater part of the 24 hours' urine, there did not always remain a sufficient quantity of it for this complicated and troublesome method of Huppert's, and therefore the investigation of all the fatty acids could not always be entered upon.

The day of absolute fasting unfortunately gave no result, as the carbohydrates which had been previously taken were still exerting their antagonistic action with regard to acetone. For that reason a fasting during 3 days was contemplated for the next year (1900).

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[a] Deutsche medicinische Wochenschrift. 1901. No. 1.

Ever since the first publication of v. Jaksch (4) appeared on acetone, our views on this body have undergone great change. The original theory that it is a derivative of albumen has been abandoned, and that it is not a transformation of or from organic albumen has been demonstrated from numerous facts by Weintraud (11) and Rosenfeld (8). Though the oxidative energy is by itself normal in the diabetic, it is customary, nevertheless, to explain the presence in blood and urine of beta-oxybutyric acid and of its derivatives, diacetic acid and acetone, as due to an increased nitrogenous exchange with which the oxidative energy could not properly keep up, it thus happening that a part of the products of decomposition of albuminous bodies passed into the blood in a state of partial combustion only, and then that no further metabolistic change could occur there. Weintraud and Laves (12) observed a case of grave diabetes which manifested no increased nitrogenous exchange whatever, and which produced, nevertheless, diacetic acid and acetone. Hence the explanation was resorted to in these cases that the sugar present in abnormal quantities in the muscles was causing, at least temporarily, an obstacle to oxidation, which would explain how the combustion of the albuminous bodies was not completely achieved (Harley's experiments).

That there is no relation whatever between the intensity of nitrogenous exchange and the quantity of acetone is proved by many a figure in my table. Nowhere is there a parallelism perceptible between the amount of the total nitrogen and acetone.

Since the quantity of nitrogen in the urine, however, represents the ratio for the albuminous decomposition, the independence of the acetone excretion from the nitrogenous exchange is evidenced thereby. On the days of the very lowest value of nitrogenous excretion there are very high acetone values (November 30th, December 1st and 2nd, 1900, Table II.). The highest values of $SO_3$ coincide with the highest nitrogenous values (14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd of December, Table II.). The same is the case for the values of $P_2O_5$. The highest figures for acetone, on the contrary, show on those days where all these values are comparatively small (30th of November, 1st, 3rd, 10th, 11th of December, Table II.). Hence, in spite of the great nitrogenous exchange, which is corroborated by both the figures for $SO_3$ and $P_2O_5$, the acetone excretion has remained unchanged by the amount of albumen exchanged.

Moreover, my experiments corroborate the fact that in exclusive nitrogenous alimentation (Tables I. and II.), and in alimentation with fat, there is an increase of the acetone excretion, in the former case undoubtedly by the destruction of fat.

The question as to whether acetone is of enterogenous or intracellular origin has been decided by J. Müller's (6) convincing experiments, in this way that unless the carbohydrates are introduced in such a way as to avoid the alimentary canal, they invariably have an inhibitory influence on the formation of acetone.

The sterilised sugar enemata which I took during 8 days, mostly in repeated doses, one hour after a cleansing enema, and which I retained, as a rule, 5 to 7 hours, caused violent pains and extreme distension (by generation of carbonic acid?), but they provoked also sometimes an irritation of the intestinal mucous membrane, noticeable by painful tenesmus, considerable burning during defæcation and stools of acid reaction. The latter were enormous in volume as compared with that of the injected sugar solution, and this was probably due to "bacterial transformation of the sugar into organic acids" (J. Müller). J. Müller did not experience this in his experiments, for they were so disposed that the sugar enema was retained for two hours only, and this precaution seems wise and well-founded also. Nevertheless, the results of my enemata also show that carbohydrates applied in this way (intra-rectum)—*i.e.*, with elimination of that part of the gastro-intestinal tract presiding over real digestion--have no inhibitory action whatever on acetone (7th, 13th, 19th, 21st of December, Table I.); only in those instances where a profuse diarrhœa has caused loss of nutritive substances, and thereby direct and indirect acetone losses, there is a comparative and quite misleading diminution of the acetone values (15th and 20th of December). This is explained easily, however, by the accidental losses[a] of acetone due to hyper-peristalsis, which, of course, could not help lowering the acetone value comparatively, comparing it with the value of the previous day, the curve of the following day appearing unduly high, though in reality rising only to its previous standard. Only a very small percentage of the sugar enemata escaped re-absorption, even on those days when diarrhœa was present, as I proved by testing the fæces several times for sugar with the method used in the sugar industry (Lehmann-Allin's method).

In 1900 (Table II.) the experiments were arranged as follows:—After observing a mixed diet for 16 days (one day of which without meat), and rather poor in proteid matter, I took to exclusive meat diet (1,000 grammes lean beef, weighed when raw) for 10 days, adding bread on 3 days in the middle of that period. This was followed by a mixed diet of 5 days, and then by a diet consisting of a measured quantity of fat for 4 days, on the second and third of which a certain amount of bread was taken; after 6 more days of mixed diet fasting was observed for 3 days. After the 60th hour, however, fasting had to be discontinued on account of faintness, and half a kilo of sauerkraut (plain) was eaten; this was taken as it happened then to be the quickest obtainable food. It does not seem, however, as if this incident had spoiled the character of the fasting day as such, for in determining half a kilo of sauerkraut later by double distillation, the first of which was performed by conducting steam for 3 hours into a glass bulb containing the cabbage, this amount yielded only 6 milligrammes of acetone. Thus, it is obvious that the high value of the acetone obtained on the third day of fasting was certainly not due to the ingestion of the sauerkraut. These 3 days were succeeded by 9 days of vegetable diet, during which nothing but vegetables were taken, except a regulated amount of bread, half a litre of milk and coffee. On some of these days additional great quantities of fat were taken, and finally, after additional meat for three days, the experiments were completed.

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[a] In a small quantity of diarrhœic stool I found, by double distillation, eighty-five hundredths mgrs. acetone. (*Cf.* Lorenz, Zeitschrift für klinische Medicin, 19, 1890.)

During the whole duration of the experiments I was in a state of under-feeding. My caloric needs were exceeded only on the fat days, naturally, however, without supplying the needs in albumen. Otherwise the calories given in my food were ranging between 1,000 and 2,000, and, except on meat days, contained insufficient quantities of albumen (60 to 100 grammes), which were far below the so-called lowest Munich rate for a man doing light work (118 albumen, 56 fat, 500 carbohydrates), and also below v. Noorden's values (2,800 calories with 80 albumen, 300 carbohydrates, 113 fat, for 70 kilo bodily weight). This under-feeding was adopted by me in hope of thus obtaining high acetone values.

As for the acetone which I determined this year in the breath, I obtained quite different results with it on fat days, as well as on fasting days, than the year before, where acetone had been determined in the urine alone. I used the respiratory apparatus described first by J. Müller (6), and employed as well by Leo Schwarz (9). This is a combination of a valvular arrangement for separating the inspired and expired air, taken from the respiratory apparatus of Geppert-Zuntz, also a light, elastic wind-bag, an absorbing apparatus with four collecting bottles, well cooled in ice, and an aspirator which could be easily regulated. The rubber condoms recommended by Schwarz (9) as valvular occlusors, proved very satisfactory, only I had to dispose of them in another way, as they could not be made to work well in the comparatively narrow glass tubes of Geppert-Zuntz' apparatus. The obstacle to inspiration and expiration thus resulting did not allow, on account of this very defect, breathing to be normally easy and even. I therefore used two powder-glasses, holding one litre each, instead of the tubes in which the valves were to work. In these powder-glasses I sunk the valvular apparatus, which was closed with two tight-fitting sealed corks, through which two tubes had been passed. By this modification a free-and-easy action of the rubber condoms was now secured. For overcoming the resistance given by the water pressure a respiratory apparatus of Schnitzler was arranged beyond the receiving bottles, each holding half a litre, the rubber stoppers of which carried long conducting and short exit tubes. On the long tubes there was a glass globe placed, as a precaution against regurgitation. A thorough cleansing of the collecting bottles was also rendered much easier by this arrangement.

Into this apparatus I breathed for 15 minutes, twice a day as a rule, morning and evening. But as there were sometimes slight differences in these samples of the breath I do not feel quite satisfied in regarding the acetone exhaled during 15 minutes, or the average of the two samples, as a sufficiently secure basis for the determination of the acetone exhaled during the 24 hours, for it is obvious that possible differences in the mode of breathing, especially when multiplied by 96 for the 24 hours, in establishing the acetone balance of the day, would bring out a different result. However, it is certainly a valuable index for the estimation of the acetone of the breath.

In comparing the results of both years we find them agreeing so far—with the exception of the fat days and fasting—as the nature of the food exerted its influence in the same way both years, on the acetone of the urine in 1899, on the total acetone (of urine and breath) in 1900.

In comparing further my tables with the experiences of others we learn that in 1899 the highest value of acetone in the urine (196 milligrammes) happens to coincide with the beginning of the meat diet, and that this value decreases gradually, just as Hirschfeld first pointed out.

Furthermore, my experiments confirm for the healthy man what was stated by Schwarz (9) to be the case for diabetics—viz., that the exclusion of carbohydrates brings about acetone exhalation through the lungs. My first fat day (December 2, Table II.) is only a seeming exception, because this was due to the impeding action of the carbohydrates taken previously, and from the effect of which the organism was not free. This retarding effect on the second day appeared repeatedly also in my experiments in the contrary sense, to which I shall refer later.

The gradual rise of the respiratory curve reported by Schwarz (9) as compared with the quick rise of the acetone curve in the urine during exclusion of carbohydrates, is shown also in my table on the 14th, 15th, 16th of November, Table II. (exclusive meat diet), and 21st, 22nd, 23rd of November, Table II.

The influence of fat nutrition on acetone-excretion through the lungs had not been studied until Schwarz (9) made his experiments. Among his observations made on the healthy man (three medical students), two gave a negative result, the last showed a slight rise of the acetone-excretion when 600 grammes were taken. As regards grave diabetes, however, Schwarz (9) was able to state that the feeding with fat brings about an increase of acetone invariably, whether carbohydrates are given or not. While this is, on the whole, also the case with me (the healthy man), it is strange that fat alimentation does not show any influence on the acetone of my *urine;* note the almost constant values of 29th, 30th of November, 1st and 2nd of December, 1900, and 22nd, 30th and 31st of December, 1899, 1st, 2nd and 3rd of January, Table I. But, on the other hand, the acetone of the lungs rises remarkably, although sometimes this is not noticeable until the second or third day. The carbohydrates taken on that day do not immediately exert their acetone-inhibitory power. We find that it takes two days to accomplish this. In the evening of December 1st there was a complete absence of acetone in the breath, at last. The next day, December 2nd, we notice a very low (normal) value for the acetone, although we would have expected that, as all carbohydrates were strictly excluded, there would have appeared high values for acetone. These high values do not fail to come, however, though only on the second day, in spite of the mixed diet that began on that day. Everywhere in this fat alimentation we observe the retarded after-effects both of the influence of the restriction as well as the ingestion of carbohydrates. Waldvogel (10) points out that this retarded absorption, when great quantities of fat have been introduced with the food, was delayed for several days, and was also perceptible in the stools—a fact which struck me, too, on inspecting my fæces.

One thing I would especially draw attention to is that the high value of the acetone in the breath on the fat days (1900 as compared with 1899) has an unmistakable significance. Had the acetone not been examined in the breath erroneous conclusions would have been unavoidable.

The days of fasting do not show their effect on acetone until rather late; it is only on the second day of fasting that acetone shows a high value in the breath, which decreases somewhat next day, without, however, diminishing the total acetone. It may be stated also here that there were found 4½ and 5½ mgr. of acetone in the saliva on the fasting days, while under mixed diet the distillation yielded only $\frac{7}{0}$ mgrs.

It is very interesting to observe the vicarious acetone excretion in the urine on the third fasting day, where the acetone exhaled happens to be low (December 11th, Table II.). Here we have on two succeeding days of fasting—*i.e.*, the conditions of the experiments being quite the same on both days—the curious fact of obtaining the same value for the total acetone, in spite of a great divergence of the values of the acetone obtained by either excretory way.

As for the vegetable days, Table II., here also the preceding period of fasting shows its retarded action on the first day, 12th of December, 1900. The influence of vegetable diet on acetone was of particular interest, for this reason, that it means under-feeding, whereby a loss of organic fat, even of organic albumen possibly, would ensue, or might do so. But for a little bread and milk for breakfast (see above), vegetables were taken exclusively; they had been cooked in water with only a trifling addition of fat, and were such as cabbage, roots, carrots, onions, spinach, and beets. Altogether I did not lose in bodily weight. (My bodily weight was ascertained every day under precisely the same conditions by the Inspector of the Sprudel Works, an expert on weighing, who, as well as I myself, gave the most conscientious attention to accuracy in detail. The weight-figures are all the more reliable as the scale was exact and was always tared with precision.) If anything, there was rather an increase noticeable than otherwise. Of course the great amount of vegetable *débris* and the consequently greater succulence of the tissues may participate in bringing it about.

The comparatively high values here obtained drew my attention to the additional fat. On two days when, for experiment's sake, much bacon was taken with cabbage (15th of December, 1900). and afterwards "carrottes Vichy," prepared with 250 grammes of butter, on December 20th, the acetone in the breath reached a high value. In these cases the ingestion of fat must have had an immediate action on increasing acetone. When meat and cheese were added to the vegetable diet there was an increase of the acetone value, only where fat destruction manifested itself by loss of weight (22nd, 23rd, and 24th of December, 1900).

This influence of the additional fat on acetone, which, as far as these experiments are concerned, showed itself almost exclusively and regularly, only by the acetone of the breath, would have remained totally unnoticed if the determination of acetone had been limited to the urine alone. Thus my results point out again the absolute necessity of taking into consideration the acetone of the breath, as otherwise very erroneous conclusions would be formed. For instance, as the results of my experiments in 1899, I was convinced that fat diet did not increase acetone.

My experiments also show that the acetone-increasing effect of fat takes place in the non-diabetic. In Schwarz' experiments on three healthy persons who were under the same conditions of nutriment (thirty days of observation), this was not the case, or apparently not.

Furthermore, Schwarz (9) found only inconsiderable variations of the acetone exhaled at different hours of the day by diabetics. In myself, a non-diabetic, these variations are also unimportant, except on December 1 (second day of fat diet), when 2·6 mgr. acetone were registered in the morning and 0 in the evening. Schwarz (9). however, reports also the case of a diabetic who had shown "in a striking manner" the independence of acetone exhaled at various hours of the day, and yet this patient showed quite inconstant values during another period of observation. The average value of the acetone of the breath during one hour on twelve successive days, under exclusive or else predominant vegetable diet (under-feeding), amounts only to 1½ mgrs. in my person, whilst Schwarz (9) quotes 4·7 and J. Müller (6) 2·3 for the healthy man. This difference may be also the reason why the traces of acetone which are claimed to exist in the respiration of most people happened very often to be absent in mine.

Contrary to Schwarz (9), according to whose statement the quantity of acetone exhaled surpasses considerably the amount of the acetone in the urine, I found, out of forty days, twenty-six times the reverse to be the case in my person.

We must account for this by individual idiosyncrasies.

The results of my experiments may be summarised as follows:—They confirm, in all important points, the experience that *the destruction of fat in the body is probably the most essential, possibly the one and only cause of acetone-excretion, whether this is expressed in the destruction of bodily fat or of the fat of food, in hunger or in fat nutriment, exclusive meat diet, &c., and that the carbohydrates act as antagonists of acetone by the great influence they have on the proper fat metabolism, by protecting, as they do, the labile fat from combustion to acetone.*

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## TABLE I. (1899).

| Date | Diet (in Grammes) | Acetone in urine of 24 hours, in milligrammes. Method: Messinger-Huppert | Total Nitrogen. Method: Kjeldahl | Acidity. Method: Lieblein | Total $P_2O_5$. Method: Neubauer-Malfatti | Ethereal $SO_3$. Method: Salkowski | Urine of 24 hours | Specific Gravity | Bodily Weight | Volatile fatty acids | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1899 | | | | | | | | | | | |
| 14 Nov. | Mixed - - - | Traces | 11·2 | 1·7 | 2·9 | — | 1530 | 1022 | — | — | Normal stool |
| 15 ,, | ,, - - - | ,, | 9·9 | 1·7 | 2·6 | — | 1486 | 1018 | — | — | ,, |
| 16 ,, | ,, - - - | ,, | 10·7 | 2·0 | 3·6 | — | 2376 | 1016 | — | — | ,, |
| 17 ,, | ,, - - - | ,, | 10·8 | — | 1·9 | — | 1099 | 1021 | — | — | ,, |
| 18 ,, | ,, - - - | ,, | 13·1 | 1·3 | 1·9 | — | 1609 | 1016 | — | — | ,, |
| 19 ,, | ,, - - - | ,, | 19·0 | 1·4 | 3·1 | — | 1942 | 1016 | — | — | ,, |
| 20 ,, | ,, - - - | ,, | 15·9 | 2·1 | 3·3 | — | 1643 | 1017 | — | — | ,, |
| 21 ,, | ,, - - - | 12 | 13·8 | 1·8 | 2·7 | — | 970 | 1027 | — | — | ,, |
| 22 ,, | ,, - - - | 16 | 14·2 | 1·9 | 2·5 | — | 900 | 1030 | — | — | ,, |
| 23 ,, | ,, - - - | 17 | 16·6 | 2·0 | 2·9 | — | 2335 | 1015 | — | — | ,, |
| 24 ,, | ,, - - - | 10 | 13·7 | 1·4 | 1·8 | — | 1750 | 1017 | — | — | ,, |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | ,, | ,, | 2 | 12·[illegible] | 1·1 | 2·8 | — | [illegible] | [illegible] | — | — | ,, |
| 26 | ,, | ,, | 10 | 14·0 | 1·8 | 2·6 | - | 1105 | 1025 | — | | ,, |
| 27 | ,, | Meat diet exclusively.<br>750 gr. meat | 48 | 19·6 | 2·7 | 3·7 | 0·0948 | 1845 | 1026 | — | — | ,, |
| 28 | ,, | 1600 | 136 | 34·1 | 1·8 | 4·0 | 0·1875 | 2510 | 1024 | 70·0 | — | ,, |
| 29 | ,, | 1100 | 97 | 26·0 | 2·5 | 3·4 | 0·2590 | 1540 | 1024 | — | — | Very copious |
| 30 | ,, | 1250 | 112 | 27·8 | 2·4 | 4·2 | 0·0595 | 1495 | 1027 | — | — | Normal stool |
| 1 | Dec. | 1500 (& 10 Na bicarb.) | 137 | 29·0 | 3·5 | 3·7 | 0·3329 | 1825 | 1026 | — | — | ,, |
| 2 | ,, | 1966ᵃ (& 12 gr. sugar) | 194 | 32·0 | 3·9 | 4·2 | 0·2763 | 2595 | 1023 | -- | — | ,, |
| 3 | ,, | 1500 (& gr. sugar) | 159 | 31·0 | 3·2 | 3·5 | 0·2604 | 2230 | 1020 | — | — | ,, |
| 4 | ,, | 1000ᵇ (& 50 gr. sugar) | 47 | 26·5 | 2·8 | 3·0 | 0·2328 | 1555 | 1024 | 67·5 | — | ,, |
| 5 | ,, | 1000 (& 50 gr. sugar) | 82 | 31·0 | 3·1 | 3·2 | 0·2411 | 1515 | 1027 | — | — | ,, |
| 6 | ,, | 1000 (& 50 gr. sugar) | 53 | 23·0 | 3·2 | 3·4 | 0·2053 | 2135 | 1020 | — | — | ,, |
| 7 | ,, | 1000 (& 50 gr. sugar, per rectum) | 57 | 20·9 | 3·2 | 3·4 | 0·2187 | 1355 | 1027 | — | — | ,, |
| 8 | ,, | 1000 (& 100 gr. sugar, per rectum) | 50 | 19·7 | 3·3 | 3·4 | 0·1451 | 1100 | 1030 | — | — | ,, |
| 9 | ,, | 1000 | 82 | 33·6 | 3·7 | 4·0 | 0·2349 | 1710 | 1025 | — | — | ,, |
| 10 | ,, | 1000 | 80 | 28·1 | 3·9 | 3·97 | 0·2625 | 1930 | 1023 | — | — | No stool |
| 11 | ,, | 1000 | 88 | 32·0 | 3·2 | 3·5 | 0·3517 | 1830 | 1025 | 67·4 | — | ,, |

TABLE I. (1899)—*Continued.*

| Date | | Diet (in Grammes) | Acetone in urine of 24 hours, in milligrammes. Method: Messinger-Huppert | Total Nitrogen. Method: Kjeldahl | Acidity. Method: Lieblein | Total $P_2O_5$. Method: Neubauer-Malfatti | Ethereal $SO_3$. Method: Salkowski | Urine of 24 hours | Specific Gravity | Bodily Weight. | Volatile fatty acids | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1899 | | | | | | | | | | | | |
| 12 Dec. | Meat diet exclusively. | 1000 - - | 97 | 12·0 | 2·6 | 3·1 | 0·3221 | 1705 | 1020 | — | + A^e, + E | Diarrhœa |
| 13 ,, | | 1000 (& 50 gr. sugar, per rectum) | 94 | 30·1 | 3·6 | 3·7 | 0·3132 | 1660 | 1026 | — | + A, – E | Normal stool |
| 14 ,, | | 1000 - - | 89 | 29·1 | 3·4 | 3·6 | 0·3251 | 1640 | 1027 | — | – A, – E | ,, |
| 15 ,, | | 1000 (& 25 gr. sugar, per rectum) | 47 | 20·9 | 2·4 | 2·6 | 0·2638 | 1665 | 1025 | — | + A, – E | Diarrhœa |
| 16 ,, | | 1000 - - | 86 | 23·2 | 2·0 | 2·9 | 0·3282 | 1385 | 1026 | — | — | Normal stool |
| 17 ,, | | 1000 - - | 46 | 22·7 | 2·2 | 2·8 | 0·2936 | 1425 | 1022 | — | — | ,, |
| 18 ,, | | 1000 - - | 53 | 22·3 | 2·2 | 2·5 | 0·2661 | 1610 | 1022 | 65·4 | — | Diarrhœa |
| 19 ,, | | 1000 (& 50 levulose, per rectum) | 85 | 25·4 | 2·6 | 3·1 | 0·3081 | 2300 | 1016 | — | — | Normal stool |
| 20 ,, | | 1000 (& 75 levulose, per rectum) | 34 | 23·0 | 2·3 | 3·39 | 0·3385 | 1540 | 1025 | — | — | Diarrhœa |
| 21 ,, | | 1000 (& 100 levulose, | 80 | 28·8 | 3·0 | 3·19 | 0·3516 | 1625 | 1027 | 66·2 | A, + E | Normal stool |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 ,, | | Fat exclusively (600 gr. butter) | 83 | 14·2 | 1·9 | 2·2 | 0·2505 | 1430 | 1015 | — | — | Diarrhœa |
| 23 ,, | | Mixed - - - | 23 | 15·8 | 2·1 | 2·4 | 0·2160 | 1165 | 1028 | — | — | Normal stool |
| 24–27 ,, | | 4 days of rest - - | — | — | — | — | — | — | — | — | — | ,, |
| 28 ,, | | Mixed - - - | 18 | 15·1 | 1·7 | 2·8 | 0·2917 | 2235 | 1012 | — | — | ,, |
| 29 ,, | | Fasting - - - | 6 | 18·8 | 1·8 | 2·8 | 0·1996 | 1920 | 1012 | — | + A, + E, − B | ,, |
| 30 ,, | Fat diet. | Butter exclusively (500 grammes) | 14 | 9·5 | 1·5 | 1·9 | 0·1891 | 1110 | 1009 | — | + A, + E, + B, + V | ,, |
| 31 ,, | | Butter, 300 gr. goose-grease, 200 (and 40 levulose, per rectum) | 39 | 8·8 | 2·4 | 2·6 | 0·1528 | 490 | 1025 | — | — | Diarrhœa, acrid stools |
| 1900<br>1 Jan. | | 584 gr. goose-grease and 300 bread | 19 | 9·8 | 1·4 | 1·95 | 0·1166 | 960 | 1014 | — | + A, + B (only by odour !) | No stool |
| 2 ,, | | 200 gr. butter and 500 gr. bread | 9 | 5·6 | 1·5 | 1·66 | 0·1613 | 580 | 1023 | — | — | Diarrhœa, acrid stools, spasms |
| 3 ,, | | 200 gr. butter and 400 gr. meat | 9 | 7·7 | 1·53 | 1·57 | 0·1895 | 935 | 1025 | — | — | Normal stool |

---

[a] The quantity of meat taken on that day is equivalent to my caloric needs.

[b] 1150 calories deficit (35 calories to the kilo).

[c] + = in traces, − = not present, A = Formic Acid, B = Butyric Acid, E = Acetic Acid, V = Valeric Acid.

TABLE II. (1900.)

| Date | Diet (Grammes) | Acetone, 24 hours (Messinger-Huppert) |  |  | Total Nitrogen (Kjeldahl) | Acidity (Lieblein) | Total $P_2O_5$ Neubauer-Malfatti | $SO_3$ |  | Urine of 24 hours | Specific Gravity | Bodily Weight | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Urine | Respiration | Total |  |  |  | Total (Salkowski) | Ethereal (Salkowski) |  |  |  |  |
| 1900. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 29 Oct. | Mixed - - - | 15 | — | — | — | — | — | — | — | — | — | — | — |
| 30 ,, | ,, - - - | 14 | — | — | 12·3 | — | — | — | — | 2020 | — | — | — |
| 31 ,, | ,, - - - | 10 | — | — | 9·9 | 0·8 | 1·7 | 187 | 0·2020 | 1434 | — | — | — |
| 1 Nov. | ,, - - - | — | — | — | — | — | — | — | — | — | — | — | — |
| 2 ,, | ,, - - - | 9 | — | — | 9·7 | 0·67 | 1·7 | 17 9 | 0·1776 | 972 | — | — | — |
| 3 ,, | ,, - - - | 9 | — | — | 12·4 | 1·48 | 2·61 | — | 0·1794 | 1716 | — | — | — |
| 4 ,, | ,, - - - | 9 | — | — | 11·0 | 1·26 | 2·4 | — | — | 1335 | 1019 | — | — |
| 5 ,, | ,, - - - | 12 | — | — | 12·7 | 0·9 | 2·1 | 2·0 | 0·1675 | 2070 | 1013 | — | — |
| 6 ,, | ,, (without meat) - | 10 | — | — | 6·2 | 0·8 | 2·1 | 2·23 | 0·1937 | 1765 | 1013 | — | — |
| 7 ,, | ,, (with meat) - | 9 | — | — | 11·8 | 1·6 | 1·9 | 1·98 | 0·1754 | 1390 | 1016 | — | — |
| 8 ,, | ,, - - - | 7 | — | — | 10·6 | 11·2 | 1·7 | 2·02 | 0·1513 | 1345 | 1014 |  | — |
| 9 ,, | ,, - - - | 14 | — | — | 12·9 | 1·7 | 2·0 | 2·04 | 0·1827 | 1675 | 1018 | — | — |
| 10 ,, | ,, - - - | 18 | — | — | 10·2 | 0·7 | 1·4 | 1·9 | 0·1829 | 1176 | 1013 | — | — |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 ,, | ,, | 18 | — | 18 | 15·5 | 1·2 | 2·0 | 2·57 | 0·2407 | 1715 | 1014 | — | - |
| 12 ,, | ,, | 11 | — | 11 | 12·5 | 1·03 | 1·85 | 2·17 | 0·1888 | 1835 | 1011 | — | — |
| 13 ,, | ,, | 11 | — | 11 | 11·0 | 1·17 | 1·75 | 2·11 | 0·1953 | 1880 | 1015 | 67·4 | — |
| 14 ,, | 1000 gr. Meat exclusively | 71 | 120 | 191 | 21·3 | 2·4 | 5·3 | 4·32 | 0·2431 | 1705 | 1024 | 67·3 | — |
| 15 ,, | ,, ,, | 186 | 55 | 242 | 26·1 | 3·0 | 3·68 | 4·97 | 0·3618 | 2555 | 1015 | 66·1 | — |
| 16 ,, | ,, ,, | 142 | 75 | 217 | 25·0 | 2·2 | 3·1 | 3·87 | 0·3227 | 1905 | 1016 | 65·8 | — |
| 17 ,, | ,, ,, | 153 | 83 | 236 | 29·0 | 2·8 | 3·2 | 4·07 | 0·3745 | 1670 | 1022 | 66·6 | — |
| 18 ,, | ,, and 250 carbohydr. | 35 | 148 | 188 | 26·4 | 1·68 | 3·03 | 4·76 | 0·5844 | 2025 | 1024 | 65·1 | — |
| 19 ,, | ,, and 250 ,, | 20 | — | 20 | 26·5 | 1·2 | 2·7 | 4·68 | 0·3571 | 1915 | 1024 | 66·0 | — |
| 20 ,, | ,, and 250 ,, | 12 | — | 12 | 28·3 | 2·42 | 3·8 | 4·47 | 0·3443 | 1775 | 1025 | 66·0 | — |
| 21 ,, | ,, exclusively | 27 | 56 | 83 | 30·8 | 2·6 | 4·3 | 4·99 | 0·3148 | 2115 | 1021 | 66·1 | — |
| 22 ,, | ,, ,, | 21 | 23 | 44 | 33·0 | 2·85 | 4·2 | 4·92 | 0·3728 | 1795 | 1025 | 65·2 | — |
| 23 ,, | ,, ,, | 71 | 55 | 114 | 38·1 | 3·4 | 3·86 | 5·03 | 0·2522 | 1865 | 1023 | 65·0 | Great irritation in rectum, painful tenesmus, but moderate diarrhœa. In sample of stool $\frac{44}{100}$ mg. acetone found. |
| 24 ,, | Mixed | 12 | 18 | 81 | 21·8 | 2·18 | 2·5 | 2·59 | 0·2238 | 2065 | 1012 | 65·0 | — |
| 25 ,, | ,, | 6 | — | 6 | 14·0 | 2·0 | 2·69 | 2·54 | 0·2301 | 1370 | 1018 | 65·4 | — |
| 26 ,, | ,, | 5 | — | 5 | 13·3 | 1·3 | 1·9 | 2·74 | 0·1929 | 1850 | 1014 | 66·3 | — |
| 27 ,, | ,, | 4 | — | 4 | 11·8 | 1·0 | 1·5 | 2·11 | 0·2464 | 2070 | 1012 | 66·0 | — |
| 28 ,, | ,, | 21 | — | 21 | 18·8 | 0·9 | 1·7 | 2·65 | 0·1914 | 1800 | 1015 | 67·5 | — |

TABLE II. (1900).—*Continued.*

| Date | Diet (Grammes) | Acetone, 24 hours (Messinger-Huppert.) | | | Total Nitrogen (Kjeldahl) | Acidity (Lieblein) | Total $P_2O_5$: Neubauer-Malfatti | $SO_3$. | | Urine of 24 hours | Specific Gravity | Bodily Weight | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Urine | Respiration | Total | | | | Total (Salkowski) | Ethereal (Salkowski) | | | | |
| 1900. | | | | | | | | | | | | | |
| 29 Nov. | 252 gr. Butter. Fat exclusively - | 30 | — | 30 | 9·8 | 0·7 | 1·4 | 1·22 | 0·2677 | 2065 | 1008 | 67·0 | — |
| 30 ,, | ,, and 350 cornbread | 19 | 120 | 139 | 7·9 | 0·9 | 4·9 | 0·90 | 0·1719 | 1370 | 1007 | 66·9 | — |
| 1 Dec. | ,, ,, - | 6 | 241 | 247 | 6·9 | 1·1 | 1·7 | 0·94 | 0·1496 | 1665 | 1007 | 66·6 | Acetone of the breath = 2·6 in the morning, 0 mg. in the evening, exhaled for 15 minutes each time. |
| 2 ,, | ,, exclusively - | 18 | 18 | 36 | 6·6 | 1·2 | 1·6 | 0·90 | 0·1645 | 1845 | 1007 | 66·0 | — |
| 3 ,, | Mixed - - - | 15 | 506 | 521 | 11·3 | 1·59 | 2·33 | 2·6 | 0·1886 | 1260 | 1005 | 66·6 | — |
| 4 ,, | ,, - - - | 6 | — | 6 | 12·3 | 1·64 | 2·95 | 2·34 | 0·2478 | 1820 | 1015 | 66·6 | — |
| 5 ,, | ,, - - - | 6 | — | 6 | 13·8 | 2·5 | 3·4 | 1·83 | 0·2548 | 2209 | 1016 | 66·5 | — |
| 6 ,, | ,, - - - | 12 | — | 12 | 13·8 | 1·24 | 2·4 | 1·73 | 0·1756 | 1855 | 1013 | 66·8 | — |
| 7 ,, | ,, - - - | 7 | 18 | 25 | 13·4 | 1·16 | 2·0 | 1·39 | 0·2344 | 1225 | 1026 | 67·7 | — |
| 8 ,, | ,, - - - | 24 | 9 | 33 | 19·0 | 1·06 | 2·6 | 2·29 | 0·1921 | 2415 | 1018 | 67·2 | — |
| 9 ,, | Fasting - - - | 127 | 18 | 145 | 12·7 | 1·48 | 2·8 | 1·38 | 0·1896 | 1855 | 1018 | 65·6 | In 20 $cm.^3$ saliva 4·5 mg. acetone, but in mixed diet only $\frac{7}{10}$ acetone found. |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 ,, | ,, - - - | 152 | 672 | 824 | 10·8 | 2·07 | 2·77 | 1·87 | 0·1781 | 1412 | 1010 | 65·2 | In 20 cm.³ saliva 5·5 mg. acetone, but in mixed diet only $\frac{7}{10}$ mg. acetone found. |
| 11 ,, | ,, - - - | 585 | 288 | 828 | 12·4 | 1·57 | 2·62 | 2.21 | 0·1818 | 1045 | 1017 | 66·0 | After the 60th hour fasting, ate ½ kilo sauerkraut, plain (= 6 mgr. acetone). |
| 12 ,, | 1 ½ kg. sauerkraut exclusively | 69 | 56 | 125 | 11·8 | 1·02 | 1·64 | 2·74 | 0·1907 | 2235 | 1012 | 66·8 | = Ingestion of 18 mg. acetone. |
| 13 ,, | Vegetables and a little bread, ½ L. milk | 21 | 9 | 29 | 8·4 | 1·2 | 1·70 | 1·59 | 0·1318 | 2160 | 1009 | 66·8 | — |
| 14 ,, | ,, ,, | 18 | 18 | 36 | 8·9 | 0·64 | 1·91 | 1·72 | 0·2354 | 2405 | 1013 | 66·7 | — |
| 15 ,, | Vegetables and rather much fat | 20 | 185 | 195 | 7·5 | 1·2 | 1·2 | 1·52 | 0·0713 | 2410 | 1011 | 67·2 | — |
| 16 ,, | Vegetables and a little bread, and ½ L. milk | 15 | — | 15 | 7·2 | 0·9 | 1·8 | 1·21 | 0·1686 | 2330 | 1010 | 66·9 | — |
| 17 ,, | ,, ,, | 12 | 19 | 31 | 6·7 | 1·11 | 3·0 | 1·46 | 0·0219 | 2500 | 1011 | 67·7 | — |
| 18 ,, | ,, ,, | 6 | 19 | 25 | 9·2 | 1·12 | 2·7 | 1·91 | 0·2384 | 2120 | 1014 | 67·6 | — |
| 19 ,, | ,, ,, | 20 | — | 20 | 9·9 | 1·15 | 2·3 | 1·64 | 0·1914 | 2855 | 1010 | 67·9 | — |
| 20 ,, | Vegetable and fat (250 butter) | 9 | 74 | 83 | 11·49 | 0·15 | 2·55 | 3·18 | 0·1927 | 2075 | 1013 | — | — |
| 21 ,, | Vegetables and meat (100) | 17 | — | 17 | 16·0 | 0·15 | 2·39 | 2·18 | 0·1414 | 1925 | 1016 | 69·0 | — |
| 22 ,, | Vegetables and much meat (250) | 17 | 28 | 45 | 27·6 | 1·14 | 2·7 | 2·24 | 0·2096 | 2850 | 1012 | 68·5 | — |
| 23 ,, | Vegetables and meat (100) | 28 | 19 | 47 | 17·1 | 1·84 | 2·3 | 2·49 | 0·2332 | 2000 | 1014 | 68·2 | — |
| 24 ,, | Vegetables and meat - | — | 29 | — | — | — | — | — | — | — | — | — | — |

## ART. VIII.—*The Combating of Tuberculosis in the Light of the Experience that has been gained in the Successful Combating of other Infectious Diseases.*[a] By GEH. MED.-RATH PROFESSOR DR. ROBERT KOCH, Direktor des Instituts für Infektions-Krankheiten in Berlin.

THE task with which this Congress will have to busy itself is one of the most difficult, but it is also one in which labour is most sure of its reward.

I need not point again to the innumerable victims tuberculosis annually claims in all countries, nor to the boundless misery it brings on the families it attacks. You all know that there is no disease which inflicts such deep wounds on mankind as this. All the greater, however, would be the general joy and satisfaction if the efforts that are being made to rid mankind of this enemy, which consumes its inmost marrow, were crowned with success.

There are many, indeed, who doubt the possibility of successfully combating this disease, which has existed for thousands of years, and has spread all over the world. This is by no means my opinion. This is a conflict into which we may enter with a surely founded prospect of success, and I will tell you the reasons on which I base this conviction.

Only a few decades ago the real nature of tuberculosis was unknown to us; it was regarded as a consequence, as the expression, so to speak, of social misery, and, as this supposed cause could not be got rid of by simple means, people relied on the probable gradual improvement of social conditions, and did nothing. All this is altered now. We know that social misery does indeed go far to foster tuberculosis, but the real cause of the disease is a parasite—that is, a visible and palpable enemy, which we can pursue and annihilate, just as we can pursue and annihilate other parasitic enemies of mankind.

Strictly speaking, the fact that tuberculosis is a preventable disease ought to have become clear as soon as the tubercle-bacillus was discovered, and the properties of this parasite and the manner of its transmission became known. I may add that I, for my part, was aware of the full significance of this discovery from the first, and so will everybody have been who had convinced himself of the causal relation between tuberculosis and the tubercle-bacillus. But the strength of a small number of medical men was inadequate to the conflict with a disease so deeply rooted in our habits and customs. Such a conflict requires the co-operation of many, if possible of all, medical men, shoulder to shoulder with the State and the whole population; but now the moment when such co-operation is possible seems to have come. I suppose there is hardly any medical man now who denies the parasitic nature of tuberculosis, and among the non-medical public too the knowledge of the nature of the disease has been widely propagated.

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[a] An Address delivered before the British Congress on Tuberculosis for the Prevention of Consumption, on Tuesday, July 23, 1901.

Another favourable circumstance is that success has recently been achieved in the combating of several parasitic diseases, and that we have learned from these examples how the conflict with pestilences is to be carried on.

The most important lesson we have learned from the said experience is that it is a great blunder to treat pestilences uniformly. This was done in former times; no matter whether the pestilence in question was cholera, plague, or leprosy: isolation, quarantine, useless disinfection were always resorted to. But now we know that every disease must be treated according to its own special individuality, and that the measures to be taken against it must be most accurately adapted to its special nature, to its ætiology. We are entitled to hope for success in combating tuberculosis only if we keep this lesson constantly in view. As so extremely much depends just on this point, I shall take the liberty to illustrate it by several examples.

The pestilence which is at this moment in the foreground of interest, the bubonic plague, may be instructive to us in several respects.

People used to act upon the conviction that a plague patient was in the highest degree a centre of infection, and that the disease was transmitted only by plague patients and their belongings. Even the most recent international agreements are based on this conviction. Although, as compared with formerly, we now have the great advantage that we can, with the aid of the microscope and of experiments on animals, recognise every case of plague with absolute certainty, and although the prescibed inspection of ships, quarantine, the isolation of patients, the disinfection of infected dwellings and ships, are carried out with the utmost care, the plague has, nevertheless, been transmitted everywhere, and has in not a few places assumed grave dimensions. Why this has happened we know very well, owing to the experience quite recently gained as to the manner in which the plague is transmitted. It has been discovered that only those plague patients that suffer from plague-pneumonia—a condition which is fortunately infrequent—are centres of infection, and that the real transmitters of the plague are the rats. There is no longer any doubt that, in by far the majority of the cases in which the plague has been transmitted by ocean traffic, the transmission took place by means of plague among the ship rats. It has also been found that, wherever the rats were intentionally or unintentionally exterminated, the plague rapidly disappeared; whereas at other places, where too little attention had been paid to the rat plague, the pestilence continued. This connection between the human plague and the rat plague was totally unknown before, so that no blame attaches to those who devised the measures now in force against the plague if the said measures have proved unavailing. It is high time, however, that this enlarged knowledge of the ætiology of the plague be utilised in international as well as in other traffic. As the human plague is so dependent on the rat plague, it is intelligible that protective inoculation and the application of antitoxic serum have had so little effect. A certain number of human beings may have been saved from the disease by that, but the general spread of the pestilence has not been hindered in the least.

With cholera the case is essentially different; it may, under certain circumstances, be transmitted directly from human beings to other human beings, but its main and most dangerous propagator is water, and therefore, in the combating of cholera, water is the first thing to be considered. In Germany, where this principle has been acted on, we have succeeded for four years in regularly exterminating the pestilence (which was introduced again and again from the infected neighbouring countries) without any obstruction of traffic.

Hydrophobia too is not void of instruction for us. Against this disease the so-called protective inoculation proper has proved eminently effective as a means of preventing the outbreak of the disease in persons already infected, but, of course, such a measure can do nothing to prevent infection itself. The only real way of combating this pestilence is by compulsory muzzling. In this matter also we have had the most satisfactory experience in Germany, but have at the same time seen that the total extermination of the pestilence can be achieved only by international measures, because hydrophobia, which can be very easily and rapidly suppressed, is always introduced again year after year from the neighbouring countries.

Permit me to mention only one other disease, because it is ætiologically very closely akin to tuberculosis, and we can learn not a little for the furtherance of our aims from its successful combating. I mean leprosy. It is caused by a parasite which greatly resembles the tubercle-bacillus. Just like tuberculosis, it does not break out till long after infection, and its course is almost slower. It is transmitted only from person to person, but only when they come into close contact, as in small dwellings and bedrooms. In this disease, accordingly, immediate transmission plays the main part; transmission by animals, water, or the like is out of the question. The combative measures, accordingly, must be directed against this close intercourse between the sick and the healthy. The only way to prevent this intercourse is to isolate the patients. This was most rigorously done in the Middle Ages by means of numerous leper-houses, and the consequence was that leprosy, which had spread to an alarming extent, was completely stamped out in Central Europe. The same method has been adopted quite recently in Norway, where the segregation of lepers has been ordered by a special law. But it is extremely interesting to see how this law is carried out. It has been found that it is not at all necessary to execute it strictly, for the segregation of only the worst cases, and even of only a part of these, sufficed to produce a diminution of leprosy. Only so many infectious cases had to be sent to the leper-houses that the number of fresh cases kept regularly diminishing from year to year. Consequently the stamping-out of the disease has lasted much longer than it would have lasted if every leper had been inexorably consigned to a leper-house, as in the Middle Ages; but in this way too the same purpose is gained, slowly indeed, but without any harshness.

These examples may suffice to show what I am driving at, which is to point out that, in combating pestilences, we must strike at the root of the evil, and must not squander force in subordinate ineffective measures. Now the question is whether what has hitherto been done and what is about to be done against tuberculosis really strikes at the root of tuberculosis, so that it must sooner or later die.

In order to answer this question it is necessary first and foremost to inquire how infection takes place in tuberculosis. Of course, I presuppose that we understand by tuberculosis only those morbid conditions which are caused by the tubercle-bacillus.

In by far the majority of cases of tuberculosis the disease has its seat in the lungs, and has also begun there. From this fact it is justly concluded that the germs of the disease—*i.e.*, the tubercle-bacilli, must have got into the lungs by inhalation. As to the question where the inhaled tubercle-bacilli have come from, there is also no doubt. On the contrary, we know with certainty that they get into the air with the sputum of consumptive patients. This sputum, especially in advanced stages of the disease, almost always contains tubercle-bacilli, sometimes in incredible quantities. By coughing, and even speaking, it is flung into the air in little drops—*i.e.*, in a moist condition, and can at once infect persons who happen to be near the coughers. But then it may also be pulverised when dried, in the linen or on the floor for instance, and get into the air in the form of dust.

In this manner a complete circle, a so-called *circulus* *vitiosus*, has been formed for the process of infection, from the diseased lung, which produces phlegm and pus containing tubercle-bacilli, to the formation of moist and dry particles (which, in virtue of their smallness, can keep floating a good while in the air), and finally to new infection, if particles penetrate with the air into a healthy lung and originate the disease anew. But the tubercle-bacilli may get to other organs of the body in the same way, and thus originate other forms of tuberculosis. This, however, is a considerably rarer case. The sputum of consumptive people, then, is to be regarded as the main source of the infection of tuberculosis. On this point, I suppose, all are agreed. The question now arises whether there are not other sources, too, copious enough to demand consideration in the combating of tuberculosis.

Great importance used to be attached to the hereditary transmission of tuberculosis. Now, however, it has been demonstrated by thorough investigation that, though hereditary tuberculosis is not absolutely non-existent, it is nevertheless extremely rare, and we are at liberty, in considering our practical measures, to leave this form of origination entirely out of account.

But another possibility of tubercular infection exists, as is generally assumed, in the transmission of the germs of the disease from tubercular animals to man. This manner of infection is generally regarded nowadays as proved, and as so frequent that it is even looked upon by not a few as the most important, and the most rigorous measures are demanded against it. In this Congress also the discussion of the danger with which the tuberculosis of animals threatens man will play an important part. Now, as my investigations have led me to form an opinion deviating from that which is generally accepted, I beg your permission, in consideration of the great importance of this question, to discuss it a little more thoroughly.

Genuine tuberculosis has hitherto been observed in almost all domestic animals, and most frequently in poultry and cattle. The tuberculosis of poultry, however, differs so much from human tuberculosis that we may leave it out of account as a possible source of infection for man. So, strictly speaking, the only kind of animal tuberculosis remaining to be considered is the tuberculosis of cattle, which, if really transferable to man, would indeed have frequent opportunities of infecting human beings through the drinking of the milk and the eating of the flesh of diseased animals.

Even in my first circumstantial publication on the ætiology of tuberculosis I expressed myself regarding the identity of human tuberculosis and bovine tuberculosis with reserve. Proved facts which would have enabled me sharply to distinguish these two forms of the disease were not then at my disposal, but sure proofs of their absolute identity were equally undiscoverable, and I therefore had to leave this question undecided. In order to decide it, I have repeatedly resumed the investigations relating to it, but so long as I experimented on small animals, such as rabbits and guinea pigs, I failed to arrive at any satisfactory result, though indications which rendered the difference of the two forms of tuberculosis probable were not wanting. Not till the complaisance of the Ministry of Agriculture enabled me to experiment on cattle, the only animals really suitable for these investigations, did I arrive at absolutely conclusive results. Of the experiments which I have carried out during the last two years along with Professor Schütz, of the Veterinary College in Berlin, I will tell you briefly some of the most important.

A number of young cattle which had stood the tuberculin test, and might therefore be regarded as free from tuberculosis, were infected in various ways with pure cultures of tubercle-bacilli taken from cases of human tuberculosis; some of them got the tubercular sputum of consumptive patients direct. In some cases the tubercle-bacilli or the sputum were injected under the skin, in others into the peritoneal cavity, in others into the jugular vein. Six animals were fed with tubercular sputum almost daily for seven or eight months; four repeatedly inhaled great quantities of bacilli, which were distributed in water, and scattered with it in the form of spray. None of these cattle (there were nineteen of them) showed any symptoms of disease, and they gained considerably in weight. From six to eight months after the beginning of the experiments they were killed. In their internal organs not a trace of tuberculosis was found. Only at the places where the injections had been made small suppurative foci had formed, in which few tubercle-bacilli could be found. This is exactly what one finds when one injects dead tubercle-bacilli under the skin of animals liable to contagion. So the animals we experimented on were affected by the living bacilli of human tuberculosis exactly as they would have been by dead ones; they were absolutely insusceptible to them.

The result was utterly different, however, when the same experiment was made on cattle free from tuberculosis with tubercle-bacillus that came from the lungs of an animal suffering from bovine tuberculosis. After an incubation-period of about a week the severest tubercular disorders of the internal organs broke out in all the infected animals. It was all one whether the infecting matter had been injected only under the skin or into the peritoneal cavity or the vascular system. High fever set in, and the animals became weak and lean; some of them died after a month and a half to two months, others were killed in a miserably sick condition after three months. After death extensive tubercular infiltrations were found at the place where the injections had been made, and in the neighbouring lymphatic glands, and also far advanced alterations of the internal organs, especially the lungs and the spleen. In the cases in which the injection had been made into the peritoneal cavity the tubercular growths which are so characteristic of bovine tuberculosis were found on the omentum and peritoneum. In short, the cattle proved just as susceptible to infection by the bacillus of bovine tuberculosis as they had proved insusceptible to infection by the bacillus of human tuberculosis. I wish only to add that preparations of the organs of the cattle which were artificially infected with bovine tuberculosis in these experiments are exhibited in the Museum of Pathology and Bacteriology.

An almost equally striking distinction between human and bovine tuberculosis was brought to light by a feeding experiment with swine. Six young swine were fed daily for three months with the tubercular sputum of consumptive patients. Six other swine received bacilli of bovine tuberculosis with their food daily for the same period. The animals that were fed with sputum remained healthy and grew lustily, whereas those that were fed with the bacilli of bovine tuberculosis soon became sickly, were stunted in their growth, and half of them died. After three months and a half the surviving swine were all killed and examined. Among the animals that had been fed with sputum no trace of tuberculosis was found, except here and there little nodules in the lymphatic glands of the neck, and in one case a few grey nodules in the lungs. The animals, on the other hand, which had eaten bacilli of bovine tuberculosis had, without exception (just as in the cattle experiment), severe tubercular diseases, especially tubercular infiltration of the greatly enlarged lymphatic glands of the neck and of the mesenteric glands, and also extensive tuberculosis of the lungs and the spleen.

The difference between human and bovine tuberculosis appeared not less strikingly in a similar experiment with asses, sheep and goats, into whose vascular systems the two kinds of tubercle-bacilli were injected.

Our experiments, I must add, are not the only ones that have led to this result. If one studies the older literature of the subject, and collates the reports of the numerous experiments that were made in former times by Chauveau, Günther and Harms, Bollinger, and others, who fed calves, swine, and goats with tubercular material, one finds that the animals that were fed with the milk and pieces of the lungs of tubercular cattle always fell ill of tuberculosis, whereas those that received human material with their food did not. Comparative investigations regarding human and bovine tuberculosis have been made very recently in North America by Smith, Dinwiddie and Frothingham, and their result agreed with that of ours. The unambiguous and absolutely conclusive result of our experiments is due to the fact that we chose methods of infection which exclude all sources of error, and carefully avoided everything connected with the stalling, feeding, and tending of the animals that might have a disturbing effect on the experiments.

Considering all these facts, I feel justified in maintaining that human tuberculosis differs from bovine, and cannot be transmitted to cattle. It seems to me very desirable, however, that these experiments should be repeated elsewhere, in order that all doubt as to the correctness of my assertion may be removed.

I wish only to add that, owing to the great importance of this matter, the German Government has appointed a Commission to make further inquiries on the subject.

But, now, how is it with the susceptibility of man to bovine tuberculosis? This question is far more important to us than that of the susceptibility of cattle to human tuberculosis, highly important as that is too. It is impossible to give this question a direct answer, because, of course, the experimental investigation of it with human beings is out of the question. Indirectly, however, we can try to approach it. It is well known that the milk and butter consumed in great cities very often contain large quantities of the bacilli of bovine tuberculosis in a living condition, as the numerous infection-experiments with such dairy products on animals have proved. Most of the inhabitants of such cities daily consume such living and perfectly virulent bacilli of bovine tuberculosis, and unintentionally carry out the experiment which we are not at liberty to make. If the bacilli of bovine tuberculosis were able to infect human beings, many cases of tuberculosis caused by the consumption of alimenta containing tubercle-bacilli could not but occur among the inhabitants of great cities, especially the children, And most medical men believe that this is actually the case.

In reality, however, it is not so. That a case of tuberculosis has been caused by alimenta can be assumed with certainty only when the intestine suffers first—*i.e.*, when a so-called primary tuberculosis of the intestine is found. But such cases are extremely rare. Among many cases of tuberculosis examined after death, I myself remember having seen primary tuberculosis of the intestine only twice. Among the great *post-mortem* material of the

Charité Hospital in Berlin ten cases of primary tuberculosis of the intestine occurred in five years. Among 933 cases of tuberculosis in children at the Emperor and Empress Frederick's Hospital for Children, Baginsky never found tuberculosis of the intestine without simultaneous disease of the lungs and the bronchial glands. Among 3,104 *post-mortems* of tubercular children, Biedert observed only sixteen cases of primary tuberculosis of the intestine. I could cite from the literature of the subject many more statistics of the same kind, all indubitably showing that primary tuberculosis of the intestine, especially among children, is a comparatively rare disease, and of these few cases that have been enumerated, it is by no means certain that they were due to infection by bovine tuberculosis. It is just as likely that they were caused by the widely propagated bacilli of human tuberculosis, which may have got into the digestive canal in some way or other—for instance, by swallowing saliva of the mouth. Hitherto nobody could decide with certainty in such a case whether the tuberculosis of the intestine was of human or of animal origin. Now we can diagnosticate them. All that is necessary is to cultivate in pure culture the tubercle-bacilli found in the tubercular material, and to ascertain whether they belong to bovine tuberculosis by inoculating cattle with them. For this purpose I recommend subcutaneous injection, which yields quite specially characteristic and convincing results. For half a year past I have occupied myself with such investigations, but, owing to the rareness of the disease in question, the number of the cases I have been able to investigate is but small. What has hitherto resulted from this investigation does not speak for the assumption that bovine tuberculosis occurs in man.

Though the important question whether man is susceptible to bovine tuberculosis at all is not yet absolutely decided, and will not admit of absolute decision to-day or to-morrow, one is nevertheless already at liberty to say that, if such a susceptibility really exists, the infection of human beings is but a very rare occurrence. I should estimate the extent of infection by the milk and flesh of tubercular cattle, and the butter made of their milk, as hardly greater than that of hereditary transmission, and I therefore do not deem it advisable to take any measures against it.

So the only main source of the infection of tuberculosis is the sputum of consumptive patients, and the measures for the combating of tuberculosis must aim at the prevention of the dangers arising from its diffusion. Well, what is to be done in this direction? Several ways are open. One's first thought might be to consign all persons suffering from tuberculosis of the lungs, whose sputum contains tubercle-bacilli, to suitable establishments. This, however, is not only absolutely impracticable, but also unnecessary. For a consumptive who coughs out tubercle-bacilli is not necessarily a source of infection on that account, so long as he takes care that his sputum is properly removed and rendered innocuous. This is certainly true of very many patients, especially in the first stages, and also of those who belong to the well-to-do classes, and are able to procure the necessary nursing. But how is it with people of very small means? Every medical man who has often entered the dwellings of the poor—and I can speak on this point from my own experience—knows how sad is the lot of consumptives and their families there. The whole family have to live in one or two small, ill-ventilated rooms. The patient is left without the nursing he needs, because the able-bodied members of the family must go to their work. How can the necessary cleanliness be secured under such circumstances? How is such a helpless patient to remove his sputum, so that it may do no harm? But let us go a step further and picture the condition of a poor consumptive patient's dwelling at night. The whole family sleep crowded together in one small room. However cautious he may be, the sufferer scatters the morbid matter secreted by his diseased lungs every time he coughs, and his relatives close beside him must inhale this poison. Thus whole families are infected. They die out, and awaken in the minds of those who do not know the infectiousness of tuberculosis the opinion that it is hereditary, whereas its transmission in the cases in question was due solely to the simplest processes of infection, which do not strike people so much, because the consequences do not appear at once, but generally only after the lapse of years.

Often, under such circumstances, the infection is not restricted to a single family, but spreads in densely inhabited tenement-houses to the neighbours, and then, as the admirable investigations of Biggs have shown in the case of the densely peopled parts of New York, regular nests or foci of disease are formed. But, if one investigates these matters more thoroughly, one finds that it is not poverty *per se* that favours tuberculosis, but the bad domestic conditions under which the poor everywhere, but especially in great cities, have to live. For, as the German statistics show, tuberculosis is less frequent, even among the poor, when the population is not densely packed together, and may attain very great dimensions among a well-to-do population when the domestic conditions, especially as regards the bedrooms, are bad, as is the case, for instance, among the inhabitants of the North Sea coast. So it is the overcrowded dwellings of the poor that we have to regard as the real breeding-places of tuberculosis; it is out of them that the disease always crops up anew, and it is to the abolition of these conditions that we must first and foremost direct our attention if we wish to attack the evil at its root, and to wage war against it with effective weapons.

This being so, it is very gratifying to see how efforts are being made in almost all countries to improve the domestic conditions of the poor. I am also convinced that these efforts, which must be promoted in every way, will lead to a considerable diminution of tuberculosis. But a long time must elapse ere essential changes can be effected in this direction, and much may be done meanwhile in order to reach the goal much more rapidly.

If we are not able at present to get rid of the danger which small and overcrowded dwellings involve, all we can do is to remove the patients from them, and, in their own interests and that of the people about them, to lodge them better; and this can be done only in suitable hospitals. But the thought of attaining this end by compulsion of any kind is very far from me; what I want is that the consumptives may be enabled to obtain the nursing they need better than they can obtain it now. At present a consumptive in an advanced stage of the disease is regarded as incurable and as an unsuitable inmate for a hospital. The consequence is that he is reluctantly admitted and dismissed as soon as possible. The patient too, when the treatment seems to him to produce no improvement, and the expenses, owing to the long duration of his illness, weigh heavily upon him, is himself animated by the wish to leave the hospital soon. That would be altogether altered if we had special hospitals for consumptives, and if the patients were taken care of there for nothing, or at least at a very moderate rate. To such hospitals they would willingly go; they could be better treated and cared for there than is now the case. I know very well that the execution of the project will have great difficulties to contend with, owing to the considerable outlay it entails. But very much would be gained if, at least in the existing hospitals, which have to admit a great number of consumptives at any rate, special wards were established for them, in which pecuniary facilities would be offered them. If only a considerable fraction of the whole number of consumptives were suitably lodged in this way, a diminution of infection and consequently of the sum total of tuberculosis could not fail to be the result. Permit me to remind you in this connection of what I said about leprosy. In the combating of that disease also great progress has already been made by lodging only a fair number of patients in hospitals. The only country that possesses a considerable number of special hospitals for tubercular patients is England, and there can be no doubt that the diminution of tuberculosis in England, which is much greater than in any other country, is greatly due to this circumstance. I should point to the founding of special hospitals for consumptives and the better utilisation of the already existing hospitals for the lodging of consumptives as the most important measure in the combating of tuberculosis, and its execution opens a wide field of activity to the State, to municipalities, and to private benevolence. There are many people who possess great wealth, and would willingly give of their superfluity for the benefit of their poor and heavily afflicted fellow-creatures but do not know how to do this in a judicious manner. Here is an opportunity for them to render a real and lasting service by founding Consumption Hospitals or purchasing the right to have a certain number of consumptive patients maintained in special wards of other hospitals free of expense.

As, however, unfortunately, the aid of the State, the municipalities, and rich benefactors will probably not be forthcoming for a long time yet, we must for the present resort to other measures that may pave the way for the main measure just referred to, and serve as a supplement and temporary substitute for it.

Among such measures I regard obligatory notification as specially valuable. In the combating of all infectious diseases it has proved indispensable as a means of obtaining certain knowledge as to their state, especially their dissemination, their increase and decrease. In the conflict with tuberculosis also we cannot dispense with obligatory notification; we need it not only in order to inform ourselves as to the dissemination of this disease, but mainly in in order to learn where help and instruction can be given, and especially where the disinfection which is so urgently necessary when consumptives die or change their residences has to be effected. Fortunately it is not at all necessary to notify all cases of tuberculosis, or even all cases of consumption, but only those that, owing to the domestic conditions, are sources of danger to the people about them. Such limited notification has already been introduced in various places, in Norway, for instance, by a special law, in Saxony by a ministerial decree, in New York and in several American towns, which have followed its example. In New York, where notification was optional at first and was afterwards made obligatory, it has proved eminently useful. It has thus been proved that the evils which it used to be feared the introduction of notification for tuberculosis would bring about need not occur, and it is devoutly to be wished that the examples I have named may very soon excite emulation everywhere.

There is another measure, closely connected with notification—viz., disinfection, which, as already mentioned, must be effected when consumptives die or change their residence, in order that those who next occupy the infected dwelling may be protected against infection. Moreover, not only the dwellings but also the infected beds and clothes of consumptives ought to be disinfected.

A further measure, already recognised on all hands as effective, is the instructing of all classes of the people as to the infectiousness of tuberculosis, and as to the best way of protecting oneself. The fact that tuberculosis has considerably diminished in almost all civilised States of late is attributable solely to the circumstance that knowledge of the contagious character of tuberculosis has been more and more widely disseminated, and that caution in intercourse with consumptives has increased more and more in consequence. If better knowledge of the nature of tuberculosis has alone sufficed to prevent a large number of cases, this must serve us as a significant admonition to make the greatest possible use of this means, and to do more and more to bring it about that everybody may know the dangers that threaten him in intercourse with consumptives. It is only to be desired that the instructions may be made shorter and more precise than they generally are, and that special emphasis be laid on the avoidance of the worst danger of infection, which is the use of bedrooms and small, ill-ventilated workrooms simultaneously with consumptives. Of course the instructions must include directions as to what consumptives have to do when they cough and how they are to treat their sputum.

Another measure, which has come into the foreground of late, and which at this moment plays to a certain extent a paramount part in all efforts for the combating of tuberlosis, works in quite another direction. I mean the founding of sanatoria for consumptives.

That tuberculosis is curable in its early stages must be regarded as an undisputed fact. The idea of curing as many tubercular patients as possible in order to reduce the number of those that reach the infectious stage of consumption, and thus to reduce the number of fresh cases, was therefore a very natural one. The only question is whether the number of persons cured in this way will be great enough to exercise an appreciable influence on the retrogression of tuberculosis. I will try to answer this question in the light of the figures at my disposal.

According to the business report of the German Central Committee for the Establishment of Sanatoria for the Cure of Consumptives, about 5,500 beds will be at the disposal of these institutions by the end of 1901, and then, if we assume that the average stay of each patient will be three months, it will be possible to treat at least 20,000 patients every year. From the reports hitherto issued as to the results that have been achieved in the establishments we learn further that about 20 per cent. of the patients that have tubercle-bacilli in their sputum lose them by the treatment there. This is the only sure test of success, especially as regards prophylaxis. If we make this the basis of our estimate, we find that 4,000 consumptives will leave these establishments annually as cured. But, according to the statistics ascertained by the German Imperial Office of Health, there are 226,000 persons in Germany over fifteen years of age who are so far gone in consumption that hospital treatment is necessary for them. Compared with this great number of consumptives the success of the establishments in question seems so small that a material influence on the retrogression of tuberculosis in general is not yet to be expected of them. But pray do not imagine that I wish, by this calculation of mine, to oppose the movement for the establishment of such sanatoria in any way. I wish only to warn against the over-estimating of their importance which has been recently observable in various quarters, based apparently on the opinion that the war against tuberculosis can be waged by means of sanatoria alone, and that other measures are of subordinate value. In reality the contrary is the case. What is to be achieved by the general prophylaxis resulting from recognition of the danger of infection and the consequent greater caution in intercourse with consumptives is shown by a calculation of Cornet's regarding the decrease of mortality from tuberculosis in Prussia in the years 1889 to 1897. Before 1889 the average was 31·4 per 10,000, whereas in the period named it sank to 21·8, which means that, in that short space of time, the number of deaths from tuberculosis was 184,000 less than was to be expected from the average of the preceding years. In New York, under the influence of the general sanitary measures directed in a simply exemplary manner by Biggs, the mortality from tuberculosis has diminished by more than 35 per cent. since 1886. And it must be remembered that both in Prussia and in New York the progress indicated by these figures is due to the first beginnings of these measures. Considerably greater success is to be expected of their further development. Biggs hopes to have got so far in five years that in the city of New York alone the annual number of deaths from tuberculosis will be 3,000 less than formerly. I take this opportunity of most urgently recommending Dr. Biggs' organisation to the study and imitation of all municipal sanitary authorities.

Now, I do indeed believe that it will be possible to render the sanatoria considerably more efficient. If strict care be taken that only patients be admitted for whom the treatment of those establishments is well adapted, and if the duration of the treatment be prolonged, it will certainly be possible to cure fifty per cent., and perhaps still more. But even then, and even if the number of the sanatoria be greatly increased, the total effect will always remain but moderate. The sanatoria will never render the other measures I have mentioned superfluous. If their number become great, however, and if they perform their functions properly, they may materially aid the strictly sanitary measures in the conflict with tuberculosis.

If now, in conclusion, we glance back once more to what has been done hitherto for the combating of tuberculosis, and forward to what has still to be done, we are at liberty to declare with a certain satisfaction that very promising beginnings have already been made. Among these I reckon the consumption hospitals of England, the legal regulations regarding notification in Norway and Saxony, the organisation created by Biggs in New York, the sanatoria, and the instruction of the people. All that is necessary is to go on developing these beginnings, to test, and if possible to increase their influence on the diminution of tuberculosis, and wherever nothing has yet been done, to do likewise.

If we are continually guided in this enterprise by the spirit of genuine preventive medical science, if we utilise the experience gained in conflict with other pestilences, and aim, with clear recognition of the purpose and resolute avoidance of wrong roads, at striking the evil at its root, then the battle against tuberculosis, which has been so energetically begun, cannot fail to have a victorious issue.

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## ART. IX.—*The Advance of Obstetric Medicine and Gynæcology in the Nineteenth Century.*[a] By JOHN W. BYERS, M.A., M.D., M.A.O. (*Hon. Causâ*); Professor of Midwifery and Gynæcology, Queen's College, Belfast; President of the Section of Obstetric Medicine and Gynæcology, British Medical Association, 1901.

MY first duty, as President of the Section of Obstetrics and Gynæcology, is to thank the Council of the British Medical Association for the high honour they have done me. No compliment could be more pleasing, and especially from the circumstance that I succeed those distinguished members of our profession who, from all parts of the United Kingdom, have, in previous years, occupied this position.

This is a historic occasion, inasmuch as it is the first meeting of the British Medical Association held in a new century. It is, therefore, only natural that we should seize upon the present as a suitable time to look backwards and to ask how have obstetric medicine and gynæcology advanced during the nineteenth century—a period more fertile in the results of scientific research than that of almost all the years that have gone before. It was during the century that has recently come to a close that the great obstetrician, Simpson, discovered the practical application of anæsthesia in labour, and that the methods of antisepsis and asepsis were gradually evolved; and these two all-important aids have really been the causes of the enormous advances in both obstetrics and gynæcology during the past quarter of a century. By their combined help, operations (such as Cæsarean Section and Symphysiotomy), which had formerly been abandoned with regret, owing to their high mortality, have been re-established as recognised safe measures of practice, and many new and improved methods of treatment have been, from time to time, successfully introduced. Conditions which before were regarded as incurable were treated with marvellous success, and, as a result, both diagnosis and technique have been almost revolutionised, because during these operations the obstetrician or gynæcologist was brought face to face with situations hitherto undescribed, while, as a further result, the morbid specimens removed have given to the science of pathology an enormous impetus by affording an opportunity for the study of interesting material which has not before been described.

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[a] An Address delivered at the opening of the Section of Obstetric Medicine and Gynæcology at the Annual Meeting of the British Medical Association in Cheltenham, July 31st, 1901.

In the early part of the nineteenth century, Naegele's brochure on "The Mechanism of Labour" gave us what Tyler Smith called the "Euclid of Obstetrics;" in more recent years Barbour's "Anatomy of Labour," as studied in frozen sections, has done much to make our knowledge of that interesting process more correct. While the eighteenth century will always be remarkable for the work done by William Hunter on obstetrical anatomy as investigated by dissection, the nineteenth century has enormously advanced our ideas of the subject by enabling us—thanks to improved methods—to observe it as presented in a series of frozen sections. By a careful study of these sections, taken at successive stages, we have the whole progress of labour placed before our eyes, and we can follow it step by step as we read the pages of a book. Several of the leaves are still wanting in this volume of sectional anatomy, but, when it is complete, we shall have what I may term a sort of cinematograph representation of the whole progress of labour, which undoubtedly will exercise a most important influence on clinical work. The nineteenth century will always have associated with it the practical application of abdominal palpation, which is such an addition to aseptic midwifery, by limiting the necessity for frequent vaginal examinations.

It was during the century that is gone that the axis-traction forceps was invented, that the management of the third stage of labour was placed on a scientific basis, and that we have learned better how to deal with such complications as the hæmorrhages which may occur both before and after the birth of the child. Almost all our knowledge of the diagnosis and treatment of extra-uterine pregnancy and of deciduoma malignum has been gained, and by the perfection of other operative measures craniotomy on a living child has been, we hope, banished. Some in this room remember when it was thought that all lying-in hospitals must be closed, owing to their being hotbeds of puerperal fever; at the close of the century we had to admit that in no place is a parturient woman so safe. Turning to the sister science, Gynæcology, what rapid and brilliant strides it has made in the last twenty-five years! Diagnosis has been rendered more exact by the bimanual method of examination in the dorsal posture. Proper views have arisen as to uterine displacements, and, owing to the success of ovariotomy, not only have thousands of years been added to the sum total of woman's life, but as a result the great triumphs of abdominal and pelvic surgery have followed. Vaginal cœliotomy has been established as a most useful alternative in many cases to abdominal section; and, largely owing to the Trendelenburg position, abdominal hysterectomy for fibroids has become a more and more successful proceeding. Our ideas as to the inflammatory diseases of the appendages and of pelvic hæmatocele have been revolutionised; but with all this enormous progress, there are two subjects about which, unfortunately, we cannot boast—puerperal fever and uterine cancer. It is indeed a terrible blot on our obstetric art that while within the memory of many of us puerperal fever has been banished from maternities in which formerly it was so prevalent, the same good results have not followed in general practice. I will give statistics from the three kingdoms.

### MORTALITY FROM PUERPERAL FEVER IN ENGLAND AND WALES.

In 1847-1856 the mortality from puerperal fever was in England and Wales 1·8 per 1000. It rose to 2·28 in 1875-1884, and to 2·46 in 1886-1895.

The following figures (which I owe to the kindness of Dr. Boxall, who has taken such an interest in this question) give the most recent available statistics:—

| Year. | Deaths from Puerperal Fever. | Death-rate from Puerperal Fever per 1,000 Births. |
|---|---|---|
| 1895 | 1,849 | 2·0 |
| 1896 | 2,053 | 2·2 |
| 1897 | 1,836 | 1·9 |
| 1898 | 1,707 | 1·8 |
| 1899 | 1,908 | 2·0 |

Dr. John Tatham, Statistical Superintendent, General Register Office, has kindly supplied me with the following most interesting details:—

*Deaths of Women at all ages from Puerperal Fever and other Accidents of Childbirth per* 1,000 *Registered Births in England and Wales.*

| | |
|---|---|
| 1871-80 | 4·72 per 1,000 |
| 1881-90 | 4·73 „ |
| 1891-99 | 5·12 „ |

IRELAND.

The following return, showing the number of deaths in Ireland, tabulated under Parturition (accidents) and Puerperal Fever, I owe to the courtesy of Mr. R. E. Matheson, Registrar-General of Ireland:—

| Year. | Total. | Death-rate per 1,000 Births Registered. |
|---|---|---|
| 1895 | 769 | 7·2 |
| 1896 | 679 | 6·3 |
| 1897 | 696 | 6·5 |
| 1898 | 560 | 5·3 |
| 1899 | 601 | 5·8 |

For the same years the deaths from puerperal fever for the whole of Ireland were:—

| Year. | Rate per 1,000 Births. |
|---|---|
| 1895 | 3·0 |
| 1896 | 2·3 |
| 1897 | 2·1 |
| 1898 | 1·7 |
| 1899 | 2·0 |

I am obliged to the Registrar-General of Scotland for giving me the following:—

*Table showing the Death-rate from Puerperal Fever in Scotland during the Five Years,* 1895-1899.

| Year. | Number of Deaths. | Proportion in every 100,000 of female population. | Proportion in every 10,000 specified Causes of Death. |
|---|---|---|---|
| 1895 | 253 | 12 | 62 |
| 1896 | 220 | 9 | 63 |
| 1897 | 205 | 9 | 52 |
| 1898 | 227 | 10 | 59 |
| 1899 | 214 | 10 | 54 |

When we contrast these lamentable statistics with the following returns for the last two years of the practice of the Rotunda Hospital, the largest lying-in charity in the three kingdoms—

*Mortality at the Rotunda Hospital for the Years* 1898-99 *and* 1899-1900.

| | 1898-99 | 1899-1900 |
|---|---|---|
| Intern Maternity:— | | |
| Total cases | 1,591 | 1,560 |
| Total mortality | 10 | 6 |
| Percentage mortality | 0·62 | 0·38 |
| Mortality from sepsis (2 of these admitted septic) | 5 | 0 |
| Extern Maternity:— | | |
| Total cases | 2,163 | 2,109 |
| Total mortality | 8 | 5 |
| Percentage mortality | 0·36 | 0·23 |
| Mortality from sepsis | 2 | 0 |
| Total cases | 3,754 | 3,669 |
| Total percentage | 0·47 | 0·27 |

For two years total - - 7,423
Percentage - - - 0·39

they should make those of us who are teachers feel how great is our responsibility, and that our efforts should be redoubled in urging upon students the importance of regarding the process of labour as a natural one and not to be lightly interfered with unless nature herself should fail, and that if interference became necessary they should use exactly the same antiseptic precautions that they see employed in any gynæcological operation. It is by the observation of these two principles—the avoidance of meddlesome interference and by the rigid use of antiseptic principles—that we may hope that in the present century the occurrence of puerperal fever will eventually be as rare in private practice as it became in the nineteenth century in lying-in hospitals.

The other subject in regard to which, I am afraid, we cannot congratulate ourselves is cancer of the uterus. How does it originate? Why is it so common? Nay more, why (at least this is my experience) is it becoming more prevalent? These questions surely demand solution. I am reluctantly forced to agree with a statement made by a distinguished American confrère, Dr. Baldy, in a paper read before the Section of Gynæcology, College of Physicians of Philadelphia, February 21, 1901:—"Cancer affecting the cervix uteri is one of the most deadly diseases with which medical men have to deal. By far the largest proportion of these patients eventually die of cancer, be it from the primary lesion or from a recurrence. And this in spite of all that has been done for them either surgically or medically." No doubt some gynæcologists may say the explanation is that operation is not done early enough, but, as Dr. Baldy fairly asks, "What is sufficiently early?" Every gynæcologist of experience must admit that he or she has met with cases where recurrence took place rapidly in what seemed to be at the time of operation a most promising condition, while again women with extensive disease have remained well for years after operation. We have passed through the stages of vaginal and of abdominal hysterectomy for cancer of the cervix, but I ask—Have we up to the present made much real progress? It is not the immediate results of the operation we want to know, it is the subsequent history of the patient. At the present time we can unfortunately suggest no other plan of treatment of cancer of the cervix except by operation; but surely we cannot boast much if the statement of Baldy is correct, that the most recent statistics—those reported in

Cullen's work on "Cancer," and the review of cases by Winter, of Königsberg—show that in reality less than 5 per cent. of all cases applying for treatment of cancer of the uterus are saved by operation. The obvious lesson is that to ensure any real success we must urge on practitioners the enormous importance of early diagnosis, and that the one symptom which should always be regarded with suspicion is abnormal hæmorrhage. Any woman with abnormal hæmorrhage at any age, and especially if she is over thirty-five years, demands the most careful clinical examination. Let us hope for greater progress in the future.

Having glanced, in what, I am afraid, is a very cursory survey, at the progress of these subjects which personally concern us, let us turn to another question of the greatest interest to the State as well as to the medical profession. During the present year the public press has been calling special attention to the falling birth-rate. It would appear that in England and Wales in 1861-71 the birth-rate per 1,000 was 34·8; in 1871-81 it was 34·7; in 1891 it was 31·4 per 1,000, and since then it has steadily gone down until in the last year of the century, 1900, it was only 29 per 1,000. In 1875, 35 children were born in the United Kingdom for each 1,000 of the population, while in 1900 there were only 29. In other words, this means for our population of 41½ millions we are losing 249,000 children annually, and the birth-rate has fallen by 2·67 in the last ten years. The actual increase of the population of England and Wales is due to the fall in the death-rate and the increase of immigration.

We are thus rapidly in England approaching the condition prevailing for some time in France and America. It is not for me at present to discuss the causes of this declining birth-rate, rather my duty is to ask what remedy can we as doctors suggest to combat a state of matters which, from a national and imperial standpoint, must be regarded as most unsatisfactory. If fewer children are, in the future, to be born in this country, we must redouble our efforts to lower the awful death-rate of infants, which during the first year of life amounts in England to 154 per 1,000, by teaching the people to pay much greater attention to rear their children properly, and by urging the public authorities to provide an adequate supply of pure milk. Our American friends are far ahead of us in such matters, and they showed their usual extraordinary enterprise last summer when they sent pure, non-sterilised milk from various parts of the States (Illinois, New Jersey, and New York) to the Paris Exhibition, where it was actually pronounced better than the average milk sold in the grounds. Quite recently "The Rockfeller Institution for Medical Research," founded by a gift of £40,000 from the millionaire whose name it bears, has decided that the first investigations to be undertaken by the scientific experts connected with it will be to co-operate with the New York Board of Health in studying the milk supply and the contaminated article as a source of danger. But we may also attack this serious problem in another way by taking greater precautions when a woman is pregnant that she may give birth to both a living and a healthy child—in other words, we must take more care to combat those conditions which are so dangerous to the child's life before and during its birth. I am afraid it is still too frequently the practice of the present day, when a patient engages a medical man to attend at her confinement, simply to note the engagement, to give a few general directions, or perchance none at all, and perhaps in some cases to examine the urine. May I urge that obstetricians should give a much more careful attention to patients who are pregnant, and especially in the case of those looking forward to their first confinement. A pregnant woman, when she engages a doctor to attend her, should be examined as carefully as if she were an applicant for life insurance; in this way he may at an early date detect a flaw in some of her organs (heart, kidney, lungs, &c.), the knowledge of which may lead him to adopt a judicious prophylactic treatment. We should instruct our pregnant patients on such questions as diet, exercise, and management of the secretions; and a most careful examination should be made of the urine from the fourth month onwards, not merely as to the presence of albumen, but in reference to its total amount and the reduction of urea. In this way a form of toxæmia (eclampsia), so fatal to mother and child, may from its early detection be carefully warded off, for it must be admitted that, in the vast majority of cases, the treatment of eclampsia, like post-partum hæmorrhage, is its prevention. Towards the end of gestation a most careful abdominal examination should be made, so that we may learn the position of the fœtus, the amount of liquor amnii, the presence or not of an abdominal tumour, and, if there is the least suspicion of deformity, the pelvic cavity should be most carefully measured. We must also be on our guard against the dread influence of the syphilitic poison, and the injurious effects of anæmia. In the case of multiparæ, an accurate history of previous pregnancies and labours is of the utmost importance. In this way, by a careful and, if necessary, by a repeated examination of the patient, we may by an early detection of complications ward them off or keep them in such abeyance that their danger is minimised; and if there should be any deformity of the pelvis, we can make up our mind what method of delivery is best suited for each particular case. By all these measures we hope that not only a living but a healthy child may be born, and that by our careful management of the patient during and after her confinement no subsequent gynæcological disease may ensue, which so often gives rise either to a permanent sterility or to an early subsequent miscarriage.

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## THE FOURTEENTH INTERNATIONAL CONGRESS OF MEDICINE, MADRID, 1903.

**The** Fourteenth International Congress of Medicine will be held at Madrid from the 23rd to the 30th of April, 1903, under the patronage of King Alphonso XII. and the Queen Regent. The subscription is 30 pesetas (equivalent to 24s.). Ladies accompanying members will be entitled to the privileges of the members in the reduction of fares on the Spanish Railways, &c., on payment of 12 pesetas apiece (or 10s.). The National Committee for Great Britain and Ireland remains the same as at the Paris Congress, Sir William MacCormac, Bart., K.C.B., K.C.V.O., being the President. The Honorary Secretaries are Dr. Percival Horton-Smith, of 15 Upper Brook-street, Grovenor-square, W., and Mr. D'Arcy Power, F.R.C.S. Eng., of 10a Chandos-street, Cavendish-square, London, W.

# PART II.

# REVIEWS AND BIBLIOGRAPHICAL NOTICES.

*Photographic Atlas of Diseases of the Skin.* By GEORGE HENRY FOX, A.M., M.D.; Clinical Professor of Diseases of the Skin, College of Physicians and Surgeons, N. Y.; Consulting Dermatologist to the Board of Health, New York City; Physician to the New York Skin and Cancer Hospital, &c. Philadelphia and London: J. B. Lippincott Co. Parts I. to VI. 1900 & 1901.

THE publishers of this artistic Atlas are to be congratulated upon their enterprise. That it may prove successful is to be desired in the interest of classical medical literature.

We have received the first six parts of the work, which is to consist of a series of eighty plates, comprising more than one hundred illustrations, with descriptive text and a treatise on cutaneous therapeutics. The Atlas will be completed in sixteen monthly parts, of which the net price will be six shillings each.

The work opens with a judicious, common-sense introduction, containing general considerations on the treatment of skin diseases. We are tempted to quote a few sentences which show the broad-minded view of skin diseases and their treatment entertained by Dr Fox:—"For the student of dermatological therapeutics the thing to learn is the great importance of treating the patient, and not merely the patient's skin." "In the treatment of diseases of the skin a correct diagnosis is of prime importance." "Bathing is a remedy which in cutaneous therapeutics should be esteemed on account of its prophylactic rather than its curative power." "Exercise exerts indirectly a beneficial effect upon skin diseases by improving the general condition of the patient." "There is a large class of skin diseases in which systematic daily exercise of a more or less vigorous character will accomplish far more than a whole pharmacopœia." "The internal use of water in the treatment of skin diseases is quite as important as its external use." These aphorisms are well worth remembering, and the following comes with special grace from one who is himself a distinguished specialist:—"Dermatology," writes Dr. Fox, "is simply a branch of general medicine, and every practising physician should be competent to treat almost any case of skin disease, provided he possesses the skill and experience which are requisite to make a correct diagnosis. Diseases of the skin do not constitute a specialty any more than do diseases of the stomach or diseases of the lungs. Success in their treatment does not depend so much upon *special* knowledge as upon experience, sound judgment, common sense, and the application of those general principles of medical science which every physician is supposed to possess."

Each number of the Atlas contains five plates. Those in the first Part show acne vulgaris faciei, eczema erythematosum, syphiloderma erythematosum, zoster pectoralis, and dermatitis venenata.

Part II. opens with a dissertation on "Acne." The illustrations are of acne vulgaris dorsi, phtheiriasis corporis, psoriasis guttata, pityriasis maculata, and variola vesiculosa and pustulosa.

In Part III. "Alopecia" is the special subject discussed. The plates are representative of lupus erythematosus, lupus vulgaris, syphiloderma papulosum, vitiligo manuum, and lichen planus.

In Part IV. there are short descriptive articles on "Anthrax" (or "Malignant Pustule"), "Canities," "Carbunculus," "Chloasma," "Chromophytosis" (better known as "Pityriasis versicolor"), and "Cicatrix." The illustrations show rosacea erythematosa, alopecia areata, psoriasis nummulata, pityriasis circinata, and pemphigus.

Part V. contains articles on "Clavus," "Comedo," "Cornu cutaneum," "Dermatitis," resulting from various causes, including all forms of external violence, the internal and local use of drugs, and the action of heat and cold. The photographs in this number are of sycosis, scrofuloderma, syphiloderma papulo-squamosum, eczema papulosum, and morphœa.

In Part VI. the subject of dermatitis is concluded with a description of "Dermatitis herpetiformis." There is also a full account of "Eczema," which will repay a careful study. The diseases illustrated in the photographs are pityriasis seborrhoica, chromophytosis guttata, psoriasis gyrata, pityriasis diffusa, and fibroma. "Fibroma cutis" is defined as "a growth of connective tissue which gives rise to tumours of varying size and appearance. These are painless and benignant in character."

The plates are beautifully finished and present life-like portraits of the various morbid states of the skin described in the letterpress. The photograph of herpes zoster is one of the most perfect delineations of the affection that we have ever seen.

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*Diseases of the Upper Respiratory Tract.* By P. WATSON WILLIAMS, M.D. Bristol: Wright & Co. 2 vols. Fourth Edition. 1901.

THIS work presents many interesting features, and embraces the whole range of throat and nose work.

The special points noticed are the anatomica descriptions of the accessory sinuses of the nose, which are correct and practical, with a special note on their development, which is usually carefully omitted in works of this nature, and is of great assistance when dealing with these diseases in young children.

The excellent drawings and photographs of the muscles of phonation, with brief notes on their action; the inclusion of descriptions of some rare and, in this country, almost unknown diseases, such as rhino-scleroma, henpuye and leprosy; and last, but not least, the introduction of the stereoscope in order that the reader may be better able to appreciate the relations and contours of the bony cavities dealt with in the photographs. It should be here mentioned that the instrument is provided in the book in a handy and practical form.

For many years our English writers allowed the Germans to be very far ahead in the matter of anatomical research and description in the nasal branch of surgery, but lately there have been several attempts made to remove this blot from our literature, and this work may be considered to be one of the foremost in this respect. The photos of the anatomical preparations are really splendid, and the only faults to be found are that they are too few in number, and that the descriptions appended do not deal with the frequent variations from normal, a knowledge of which is essential to enable the surgeon to make diagnoses and operate in these regions. The book may be confidently bought by anyone anxious for a work on the upper air tracts, and will well repay careful study. The price (17s. 6d.) for the two volumes is very moderate.

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*Golden Rules of Skin Practice.* By DAVID WALSH, M.D. Edin.; Hon. Physician Western Skin Hospital, London, W.; author of "The Röntgen Rays in Medical Work," &c. "Golden Rules" Series No. VIII. Bristol: John Wright & Co. 1900.

THIS little volume of a useful series is excellently compiled. The subjects are placed in alphabetical order, and are easily found.

Although we do not advise the study of skin disease by manuals of this kind, we can unhesitatingly recommend this little book to those desirous of having a pocket note-book on skin affections in an exceedingly neat form. It fits the waistcoat pocket.

The rules are mostly guiding principles of skin practice, and are thoroughly sound. The author is to be congratulated upon the skilful way in which he has epitomised his subject. It is well worth a shilling.

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*Saunders' Year-book of Surgery.* Under the general editorial charge of GEORGE M. GOULD, M.D. Surgery. Pp. 610. 1901.

THIS volume is a yearly digest of scientific progress in all branches of surgery, drawn from journals, monographs, and text-books of leading American and Foreign authors—thus sections are devoted to general surgery, obstetrics, gynæcology, orthopædic surgery, ophthalmology, otology, diseases of the nose and larynx, and anatomy.

For the busy practitioner such a digest of current surgical literature is absolutely essential, as want of time prevents him reading anything in the shape of monographs or text-books. One who has not read over the volume could scarcely conceive how so much information could be so compressed, yet making the writer's ideas so clear and readable. The editor has done his work well, and we heartily congratulate him on his successful representation of the current literature of the year. The word "microscopic," on page 232, four lines from the bottom, should read "cystoscopic." We strongly recommend the volume for study and reference to both specialist and busy general practitioner.

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*A Manual of Materia Medica and Pharmacology.* By DAVID W. R. CULBRETH, Ph.D., M.D.; Professor of Botany and Materia Medica in Maryland College of Pharmacy, and Associate Professor of Materia Medica in the University of Maryland Medical and Dental Schools. Second Edition, enlarged and thoroughly revised. With 464 Illustrations. London: Rebman, Limited.

PROFESSOR CULBRETH, in offering the second edition of his work to the professions of Medicine and Pharmacy, in competition with authors of known celebrity, both on this side and on the western side of the Atlantic Ocean, deserves the recognition which such laborious and modernised compilation demands.

The volume contains 885 pages, six primary divisions, and an appendix.

Part I. exhausts 583 pages of the work, and consists of a description of the organic drugs from the vegetable kingdom, the arrangement shaped after the method of Engler and Prantl in their "*Die Natürlichen Pflanzenfamilien,*" modified to bring it into nearer conformity with that of Britton and Brown's "Illustrated Flora."

The drugs, which appear under their natural orders, are given with habitat, synonym, derivations, description of plant, adulterations, chemical constituents, preparations (official and unofficial), properties, uses in medicine and incompatibles, and in many instances there are excellent illustrations of the whole plant or portion used.

This is unquestionably the feature of the book, which is developed more from the pharmacognostical aspect of Materia Medica than from the other divisions of the subject; there are 11 tabulated recapitulations interleaved in this portion of the text.

The 29 succeeding pages are devoted to Animal Materia Medica, and constitute the second portion of the work. Useful information is given in this section, and we notice that in connection with pepsine "taka-diastase" is mentioned as "a kindred ferment to diastase, which is prepared by the action of a kind of fungus upon steamed rice . . . claimed to convert 100 times its own weight of starch into glucose in ten minutes."

This statement of its properties appears anomalous in reference to its known power of decreasing the sugar in the urine of a diabetic patient.

The Third Part deals with the non-metals and metals and their compounds, and consists of 122 pages. It may be noted that the atomic weights are not those that have been arranged by recent research; for instance, sulphur is given as 32, not 31·82. Carbon as 12, not 11·91, &c. The text is, however, well written and good from the point of view of Materia Medica.

Part IV. is devoted to the carbon compounds, and is divided into a description of the fatty and aromatic series of hydrocarbons that are of interest to medical practitioners.

Part V. gives the chemical relations of the carbon compounds used in medicine. This chapter is worthy of careful study in its attempt to explain the constitution of intricate molecules by depicting their graphic formulæ, and showing their chemical relation to Methane and Benzine.

Part VI. discusses the microscope and its uses in practical Materia Medica.

The appendix deals with antidotes, prescription writing, doses of rare drugs, medical abbreviations, &c.

The book is well written, and well brought out and illustrated, and contains a vast amount of useful and accurate information. It could not fail to afford help even to the already well-informed, and would be exceedingly useful as a reference.

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*The Ophthalmoscope.* A Manual for Students. By GUSTAVUS HARTRIDGE, F.R.C.S. With 65 Illustrations and 4 Plates. Fourth Edition. London: J. and A. Churchill. 1901. 8vo. Pp. 153.

IN his introduction, the author hopes that it may be found useful not only to ophthalmic students, but also to the large class of practitioners whose opportunities of seeing cases are few and far between, and who may desire to learn the use of the ophthalmoscope when practical instruction is out of their reach. In the present day the ophthalmoscope is almost as necessary to the physician as it is to the ophthalmic surgeon, since many general diseases may first be detected by changes taking place in the fundus, frequently without any subjective symptoms.

The object which the author set before him has been fairly well accomplished. The book is very creditably edited and illustrated, and, on the whole, the subject matter is clearly expressed, and the explanations lucid, although, in more places than one, there is room for improvement in this regard; for instance, at page 79 he writes—"The macula lutea, which is the part of most distinct vision, is free from any visible vessels, nevertheless it is exceedingly vascular, the capillary meshes being much closer together than in any other part, except at the fovea centralis, where they are absent." Does not this sound like a "bull"? It seems to say that the capillary meshes are closer together where they are absent. Of course we know what he means, but it might easily lead to uncertainty in the mind of one less accustomed to such modes of expression.

The first chapter on optics is transcribed in full from his book on the "Refraction of the Eye," which we have already reviewed.

# PART III.

# SPECIAL REPORTS.

## REPORT ON PRACTICE OF MEDICINE.

By Henry T. Bewley, M.D. Univ. Dubl.; F.R.C.P.I.; Physician to the Adelaide Hospital; and Lecturer on Forensic Medicine and Hygiene, Trinity College, Dublin.

I. GALL-BLADDER COMPLICATIONS OF TYPHOID FEVER.
II. A SIGN OF INTRA-THORACIC TUMOUR.
III. THE DIAGNOSIS OF CONGENITAL HEART DISEASE.
IV. PERIGASTRIC ADHESIONS.
V. THE PITUITARY GLAND IN ACROMEGALY AND GIANTISM.
VI. THE TENDON REFLEXES IN TYPHOID FEVER.
VII. DIPHTHERIA BACILLI IN HEALTHY THROATS.
VIII. THE ACTION OF MORPHIN ON THE STOMACH.
IX. ON THE USE OF OPIUM IN THE DIARRHŒAS OF CHILDREN.
X. MASSAGE IN ABDOMINAL TUBERCULOSIS.
XI. THE RELATIVE VALUE OF VARIOUS DRUGS IN WHOOPING-COUGH.
XII. THE TREATMENT OF WHOOPING-COUGH.
XIII. SALOL IN DIABETES.
XIV. STRYCHNINE IN TIC DOULOUREUX.

### I. GALL-BLADDER COMPLICATIONS OF TYPHOID FEVER.

G. N. B. Camac ("The Johns Hopkins Hospital Reports," 1900, Vol. VIII., p. 339) says a consideration of the relation of the typhoid bacillus to cholecystitis and cholelithiasis has led him to the following conclusions:—

(1) Typhoid bacilli may readily gain entrance to the gall-bladder, their journey thither being in all probability from the gastro-intestinal tract, through the portal system to the liver and then with the bile secretion into the gall-bladder. This last event takes place only when the liver

has been disabled by the poisonous products of the bacteria and in its efforts to overcome the invasion.

(2) The bacilli may sally forth from the gall-bladder to reinfect the system before immunity is established, thus producing relapses, a common occurrence with the too early return to foods requiring bile for their digestion.

(3) In the presence of gall stones, or in the event of mucus formation leading to occlusion of the duct, the typhoid bacilli, together with other organisms, may cause cholecystitis, ulceration, and perforation.

(4) The gall-bladder, owing to the continued storing of bile therein, may become greatly distended, threatening rupture. So long, however, as the ducts remain patulous no further pathological condition other than the accumulation of mucus and the typhoid bacillus need develop. The presence, however, of mucus rendering occlusion at any moment possible constitutes this condition as one demanding immediate relief.

(5) Immunity having been established, the bacilli may remain harmlessly for years in the gall-bladder, being discharged from time to time by the intestine. Should occlusion of the duct from any cause, mucus, stone, &c., occur, cholecystitis may develop, and these organisms may be found in the contents of the gall-bladder.

(6) The typhoid bacillus frequently aggravates cholecystitis in the presence of gall stones, but that the typhoid bacillus is productive of the gall stones is by no means certain.

An abstract of nine cases of cholecystitis complicating, or as a sequel to typhoid fever, which have occurred in the Johns Hopkins Hospital is then given. The symptoms of the affection are—*Pain*, the earliest and most constant. In most cases it is situated in the right hypochondrium. In one case it was in the right iliac region. *Tenderness* over the seat of pain is the next most constant symptom. *Tumour* is the surest symptom. *Jaundice* is most inconstant; under any circumstances it is rare in typhoid fever. Temperature presents but slight variation beyond a marked drop in the event of perforation. Chill and sweating are of little value as symptoms.

The treatment indicated, in view of the danger of rupture (30 out of 74 cases), is early laparotomy whenever a distended gall-bladder is diagnosticated in typhoid fever.—*Med. Chronicle*, May, 1901.

### II. A SIGN OF INTRA-THORACIC TUMOUR INVOLVING THE POSTERIOR MEDIASTINUM.

Dr. Graham Steele (Manchester) records a case of tumour of the posterior mediastinum, in which one particular physical sign was very well marked. The feature presented by it, to which he specially calls attention, was the remarkable and uniform thrusting forwards of the heart *en masse*. The ordinary impulses of the heart are—(1) the apex-beat, representing the impulse of the left ventricle, which alone forms the apex of the heart; (2) the diffuse impulse, corresponding to the movements of the right ventricle, usually observed best in the epigastrium; and (3) the weak impulse, which appeals to the sense of sight rather than to that of touch, seen to the left of the sternum in the second intercostal space when the infundibulum of the right ventricle has become dilated, and most commonly in cases of chlorosis and of mitral stenosis. In the case described none of these impulses could be distinguished. The whole heart seemed to thrust itself forwards *en masse* during the systole, the explanation, no doubt, being the implication of the posterior mediastinum by the growth. In the record of the autopsy there is described "a hard mass in the upper parts of the middle and posterior mediastina, on which the base of the heart appeared to rest." The heart, during its diastole, is flaccid, and may be supposed to a large extent to assume the shape of the space surrounding parts are disposed to afford it. In this relation the effect of the elasticity of the lungs must be borne in mind. But when the heart muscle enters into systole the organ becomes a rigid mass, before which the surrounding soft parts—and, therefore, the anterior chest-wall when the posterior mediastinum is encroached upon—have to give way. This is the consideration that, he believes, explains the phenomenon in question.—*Med. Chronicle*, April, 1901.

## III. THE DIAGNOSIS OF CONGENITAL HEART DISEASE.

Professor von Starck, while admitting the impossibility of diagnosticating the exact character of anomalies present in congenital heart affections, thinks that we should always endeavour to determine the condition, especially as a help to prognosis regarding the duration of life.

The diagnosis of pulmonary stenosis is not, as a rule, difficult, the symptoms being—cyanosis dating from birth, hypertrophy of the right ventricle, a systolic murmur over the second left intercostal space, which is not transmitted into the vessels of the neck, and weakening of the second pulmonary sound. Eventually we get clubbing of the fingers, and other evidences of venous stasis.

The determination of a patent ductus arteriosus has often been confirmed at the *post-mortem* examination. The following are the signs:—Hypertrophy of the right ventricle, a systolic murmur over the sternal end of the second left interspace, transmitted into the vessels of the neck, and an accentuated second pulmonary sound. Cyanosis is often absent in these cases. The recognition of a patent septum is often impossible, and when it occurs it is generally accompanied by stenosis of the pulmonary artery. An important point in the differential diagnosis of the two conditions is to be found in the quality of the pulse. In uncomplicated stenosis the pulse is weak and small, whereas in stenosis with deficient septum it is practically normal.—*Arch. f. Kinderheilk.*, Stuttgart, Bd. xxviii. Heft 3 and 4, and *Edinburgh Med. Jour.*, Jan., 1901.

## IV. PERIGASTRIC ADHESIONS.

F. D. Bird, M.S. (*International Medical Journal*, December 20, 1900), in an interesting paper upon this subject, states that these adhesions are very common, occurring in 5 per cent. of all necropsies; that they vary widely in density, texture, size, and shape; that they are due to a variety of causes; that they are of syphilitic origin in some cases; that they tend to disappear in many instances; and that they may produce no symptoms or give rise to grave ones. The most important causes are naturally gastric or duodenal ulcers, but of almost equal frequency, the author thinks, are infections from the bile duct. With regard to the symptoms, Mr. Bird considers that the main ones are the following:—Localised epigastric pain coming on, or increased by food, especially half an hour after the food has been taken; diminution or disappearance of the pain in the recumbent position, and increase of the pain on assuming the upright position or on movement; and the futility of medicinal and dietetic treatment. Vomiting is, in his opinion, not a prominent symptom in most cases. Jaundice may be present, but is an accident.—*Quarterly Med. Journal*, May, 1901.

### V. THE PITUITARY GLAND AS A FACTOR IN ACROMEGALY AND GIANTISM.

Woods Hutchinson has written a series of very interesting articles on the above subject. The early papers were published in 1898, and the more recent ones have just appeared.

Hutchinson points out in his first paper that previous to 1890 the pituitary gland was almost unanimously regarded as a purely vestigial structure and possessing no present value to the organism. In that year interest in its function, if it possessed any, was aroused by the announcement of Souza-Leite, that the gland was markedly enlarged in most cases of the disease known as acromegaly, which was first described by Marie in 1886.

As a result of the analysis of the literature on the subject, and in particular of nineteen cases of acromegaly in which microscopic study of the enlarged pituitary gland was made, Hutchinson draws the following conclusions:—

(1) That the pituitary body is still functional.

(2) That disturbances of its metabolism are the principal factors in both acromegaly and giantism, the difference between the results being simply due to the stage of individual development at which the disturbance of its function begins.

(3) That the nature of the overgrowth in both these diseases is primarily on the order of a pure functional hypertrophy; later, however, losing some of the definiteness of its impulse, and either producing immature tissue

of a mixed type or resulting in simple hæmorrhagic exudation, with either cyst formation or complete breaking down of the tissue mass.

(4) That it seems probable, although upon this head the evidence is still uncertain, that some part is played by this body in "dwarfism," rickets, and the dwarf forms of cretinism.

(5) That a reflex disturbance of its function may possibly underlie the dystrophy accompanying pharyngeal adenoids.

(6) That it would appear to be a sort of "growth centre" or proportion regulator of the entire appendicular skeleton.—*New York Medical Journal*, Vol. LXVII., 1898, pp. 341, 450, and Vol. LXXII., 1900, July 21 and 28, and *American Journal of Medical Science*, March, 1901.

### VI. A CONTRIBUTION TO THE STUDY OF THE TENDON REFLEXES IN TYPHOID FEVER.

Remlinger (*Revue de Médecine*, 10 Janvier, 1901, No. 1, p. 46) records that the first reference found in literature to the condition of the reflexes in typhoid fever was made by Strümpell in 1878. He found that they were increased during convalescence from the disease. Several reports on the same subject have appeared since that date, and these the writer briefly reviews. The results of the investigation have been most contradictory. The patellar reflex was found diminished by Petit, Clerc, Olive, de Fleury, Delom-Sorbé, and Beaujeu. It was claimed to be exaggerated by Strümpell, Gilbert Ballet, Pluyand, Perret and Devic, and Renard. According to Albouze, the patellar reflex is diminished during the acute stage of the fever, and increased during convalescence. Renard believed that there was a close parallel relationship between the knee-jerk and the foot clonus. On the other hand, Albouze held that when the knee-jerks are exaggerated the foot clonus is diminished, and *vice versa.*

The previous results having been so variable, Remlinger decided to study the condition of the tendon reflexes in 100 cases of typhoid fever. The reflexes that he observed particularly were the patellar tendon reflex, patellar clonus, foot clonus, and great toe clonus elicited by percussion over the tendo Achillis. He gives clinical notes of twenty cases to illustrate the variations found in the state of the reflexes. His own results show that the effect of toxins in typhoid fever is by no means a constant one. In 29 cases the reflexes were abolished; 3 of these, or 10·31 per cent., died. In 17 cases the reflexes were diminished, death occurring in 2 cases, or 11·64 per cent. In 22 cases they were normal, death occurring in 3 cases, or 9·99 per cent. In 32 cases the reflexes were exaggerated. In the text he only accounts for 28 cases in this group, and states that 7 of the 28, or 25 per cent., died. Remlinger states that whereas there does not appear to be a very definite relationship between the severity of the typhoid attack and the effect on the reflexes, yet it would appear that exaggeration of the reflexes occurs in the severest type of cases. and in the forms which he designates as ataxic and ataxo-adynamic.—*Amer. Journal of Medical Science*, July, 1901.

### VII. DIPHTHERIA BACILLI IN HEALTHY THROATS.

F. P. Denny, M.D., Brooklyn (*Boston Medical and Surgical Journal*, Vol. CXLIII., No. 21), says the occurrence of virulent diphtheria bacilli in the throats of healthy individuals has given rise to much misunderstanding among the laity and in the profession. These cases are, in Dr. Denny's opinion, in no way inconsistent with the generally accepted theories of the disease. The researches of Köhn and others are mentioned, where 8 per cent. of healthy persons who had not been in contact with diphtheria cases were found to contain the diphtheria bacillus, while 8 per cent. of those who had been in contact contained the organism. The high percentages recorded in the general literature on the subject was due entirely to the fact that in most cases the investigations had been made in institutions where the disease had been prevalent, and also that in many cases no distinction was made between the virulent and non-virulent organisms.

It is now quite definitely known that virulent bacilli may multiply in the throats of persons without producing any symptoms whatever, because these persons have a natural immunity. In the same way these bacilli multiply in the throats of persons convalescing from diphtheria without doing further injury on account of their temporary immunity.

Wasserman was able to show that the blood of persons immune against the virulent-diphtheria infection, when injected along with a culture into susceptible animals, was capable of protecting them. In Dr. Denny's opinion the freedom from injury in the one case is due to *natural* immunity, while in the case of those recently attacked the immunity is an *acquired* one.

The number of bacilli found in healthy throats varied enormously. As a rule, however, they are less in number than in the case of persons suffering from the disease. As to the very important point of the extent to which such persons are a danger to the community, Dr. Denny says that all persons are dangerous in proportion to (*a*) the number of bacilli present, and (*b*) the amount of coughing, sneezing and other means of ejecting the material. While, therefore, these healthy throats may spread the disease, both theory and practice indicate that they do so to a much less degree than do persons suffering from an acute attack. Dr. Denny gives a large number of instances of the value of examining the throats of persons who have been in contact with diphtheria cases.—*Quarterly Medical Journal*, May, 1901.

### VIII. MORPHIN AND THE STOMACH.

Dr. B. Hirsch considers two features of the action of morphin on the stomach — its effects on the motor mechanism and on the secretion of normal hydrochloric acid. Fluids when taken by the normal stomach are passed into the duodenum in within ten to fifteen minutes, but under the influence of this drug there is a tonic spasm of the muscular fibres about the pylorus which prevents the stomach's contents from passing into the duodenum, at times for several hours. The hydrochloric acid is at first diminished, but it is later markedly increased. Both effects are ascribed to central influences in the medulla.—*Centralblatt für innere Medicin*, 1901, No. 2, S. 72, and *American Journal of Medical Science*, May, 1901.

## IX. ON THE USE OF OPIUM IN THE DIARRHŒAS OF CHILDREN

Dr. F. M. Crandall, after calling attention to the too complete disuse of opium in these cases by many doctors, says that it is contraindicated (1) in the first stages of acute diarrhœa, before the intestinal canal has been freed from decomposing matter; (2) when the passages are infrequent or of bad odour; (3) when there is a high temperature or cerebral symptoms are present; (4) when its use is followed by elevation of temperature or the passages become more offensive.

It is indicated (1) when the passages are very frequent, with pain; (2) when the passages are excessively frequent, large, and watery; (3) in dysenteric diarrhœa preceded by castor oil or a saline.; (4) in late stages, with small, frequent, nagging passages; (5) when the passages consist largely of undigested food, and the bowels act as soon as food is taken into the stomach.

The method of administration is of decided importance. The opiate should not be added to the ordinary diarrhœa mixture, which is usually repeated at short intervals. It should be given alone. The dose can thus be regulated with much more certainty. This permits of the diarrhœa mixture being largely increased if the exigencies of the case require. Intervals should be sufficient to permit the effect to partially subside before the dose is repeated. They should rarely be less than three hours, while four hours is more commonly advantageous. Lack of precision and exactness has been the cause of much of the harm that has resulted from the use of opium in diarrhœa. Precision can only be attained by knowing the precise amount of each dose and the exact interval at which it is given. Opium is too potent a drug to be administered with the inexactness with which chalk mixture, bismuth, and the astringents are commonly prescribed. A little more or a little less of those preparations will do no harm; too much opium may be fatal.—*Internat. Med. Magazine,* July, 1900.

## X. MASSAGE IN ABDOMINAL TUBERCULOSIS.

Durante contends in this paper that before advising the operation of laparatomy in cases of tuberculous peritonitis, palliative measures should be given a fair trial, as many cases recover completely without being subjected to surgical interference. He claims a high place for abdominal massage amongst these palliative measures, if employed sufficiently early.

He considers that, in addition to the general beneficial effect produced by improving the nutrition, it has also a very marked local influence on the disease, facilitating not only the absorption of fluid, but by stimulating the action of the bowels it thereby lessens the pressure on the peritoneal surface. It also stimulates the abdominal circulation, and thus helps the process of absorption. The author reports three cases of tuberculous peritonitis in which this treatment was employed, in all of which the fluid was completely absorbed—*Pediatria*, Napoli, June, 1900, and *Edin. Med. Jour.*, January, 1901.

## XI. A COMPARISON OF DRUG VALUES IN THE TREATMENT OF 752 CASES OF PERTUSSIS.

Charles G. Kerley (*Pediatrics*, May 1, 1900) presented a paper under this title. The cases were separated as they developed into groups of twenty, and were allowed to cough without treatment until the height of the paroxysmal stage was reached, which usually required from ten to fourteen days. Five-sixths of the patients were under four years of age, and one-half under two years. The duration of the attack had varied between three and twenty weeks, the usual duration having been between six and eight weeks. Resorcin and boric acid with sodium bicarbonate were tried by insufflation in six institution cases, but were discontinued after three days. Alum, fluid extract of horse-chestnut leaves, dilute nitric acid, cocaïn, bromoform, bromides, belladonna, and antipyrin had all been tried. The first three had been found valueless; alum appeared to be of some service, but had been badly borne by the stomach; bromoform had proved very unreliable. Cocaïn in doses of one-tenth of a grain every four hours for a child of two years had been employed in about twenty-five cases. It had controlled the severity of the paroxysm somewhat, but not sufficiently to warrant its continuance.

Quinine in large doses (twelve to twenty grains daily) had produced great benefit, the number and severity of the paroxysms being remarkably controlled and diminished one-half or one-third. Belladonna had been used in sixty cases, pushed to its physiological effect, but no beneficial effects had been observed. Twelve to sixteen grains a day of a mixture of equal parts of the bromides of sodium, ammonium, and potassium, at the age of one year, gave better results than were obtained with the previously mentioned drugs.

Antipyrin had been used in sixty cases, and had controlled the paroxysms better than any other drug employed, and caused only a trifling depression if administered with ordinary care. The combination of bromides with antipyrin had been used in sixty cases, with better results than from one or other of these drugs independently. For a child of eight months half a grain of antipyrin and two grains of sodium bromide should be given every two hours for six doses, and then its administration should be discontinued for twelve hours before being resumed. For a child between two and a half and four years of age, two grains of antipyrin and three or four grains of bromide should be given every two hours for twelve hours, and then discontinued for twelve hours before being resumed. The steam spray and fresh air were also useful adjuncts to the drug treatment.—*American Journal of Medical Science*, April, 1901.

## XII. THE TREATMENT OF WHOOPING-COUGH.

Godson (*Birmingham Med. Rec.*, April, 1901) states that in response to a circular on this subject, sent to a large number of general practitioners, he obtained replies from which he has been enabled to form the following conclusions:—"The drugs most used are antipyrin, belladonna, creosote, carbolic acid and opium. Chloral hydrate, quinine and butyl-chloral hydrate are mentioned as accessories. The relative popularity of these drugs was—belladonna, 32 per cent.; carbolic acid, 28 per cent.; bromides, 20 per cent.; creosote, 12 per cent.; antipyrin, 6 per cent.; paregoric, 2 per cent. The practitioners who had used creosote vapour were, without exception, enthusiastic in its praise. When this is employed the benefit derived is soon apparent. The first effect is a diminution in the number of paroxysms, and after a few days of treatment all vomiting ceases. In many cases a cure is effected in 5 or 6 days; in very virulent attacks it may require as many weeks. Creosote vapour may be employed by means of steam, steam spray, dry or moist inhalation, by sprinkling on cloths hung in the sick room, or by vapour from a spirit lamp. The author recommends the following general treatment:—Commence at once with the continuous inhalation of creosote. Treat any accompanying bronchitis. Antipyrin may be used when the lungs are fairly clear and the circulation is good. Expectorants may be combined with antipyrin. The chest and upper part of the spine should be treated by counter-irritation. Good air, warm clothing, light and wholesome food are necessary. The average length of time required for a cure with this treatment is 20 days.—*International Med. Magazine*, June, 1901.

### XIII. SALOL IN DIABETES.

Teschemacher (*Therap. Monatsh.*, Berlin, January, 1901) has tried Ebstein's plan of treating diabetes by large doses of salol. Of nine cases, three severe cases showed no improvement under salol, but the other six were markedly benefited. These were moderately severe cases, in which a strict diet caused the sugar to disappear from the urine, though the improvement was only very gradual. Salol caused the sugar to fall immediately. In one case it dropped from 4 per cent. to a trace, or less than 0·1 per cent., and in two other cases from 1·5 per cent. to 0 or 0·1 per cent. In a case where strict diet had reduced the percentage only from 4·6 to 3·6, salol in five days caused the sugar to entirely disappear. The salol is administered in 15 gr. doses, four times a day, for five days. In no case were gastric disturbances or singing in the ears noted. Teschemacher notes, as a hitherto undescribed observation, that the drug eliminated in the urine refracts polarised light to the left. In four normal urines, after salol was given, a refraction of 0·4 or 0·5 was observed. So that

Teschemacher concludes that, in the case of a diabetic patient taking salol, a refraction to the left of 0·3 to 0·5 represents either merely a trace of sugar, or at most 0·1 per cent. Teschemacher thinks that in salol we have a drug which can reduce the sugar to a trace, in moderately severe cases of diabetes, within a few days. The action does not seem to last long, as the sugar gradually reappeared after the drug was stopped.—*Edinburgh Med. Journal*, March, 1901.

### XIV. STRYCHNINE IN TIC DOULOUREUX.

Potts reports (*Therap. Gaz.*, Detroit, Oct. 15, 1900) two cases which he has treated according to Dana's method. In one case it proved very successful, but failed in the other. The successful case was that of a woman, aged 45, who had suffered for over a year. The paroxysms were very severe, and affected all branches of the nerve, opening the mouth and eating bringing on the paroxysms. There was no arterio-sclerosis. The patient was put to bed, given mild diet and an iron and arsenic tonic. Daily injections of strychnine were used, commencing with $\frac{1}{30}$ gr., and gradually increased, till at the end of seventeen days $\frac{1}{8}$ gr. was used, which caused marked symptoms. Pain subsided in about a week, and treatment was discontinued after seven weeks, except by the tonic mixture. The patient remained well for twenty-one months, when she had a relapse which was treated in the same way, and was cured in seventeen days. The other case improved for a short time at the commencement of the treatment, but had eventually to submit to operation. Potts mentions three other cases which have been treated in a similar fashion by other physicians. He agrees with Dana that patients most likely to be benefited are those who have suffered less than two years, and who are anæmic and exhausted. Those suffering from arterio-sclerosis and neuritis are not likely to be benefited.—*Edinburgh Med. Journal*, Dec., 1900.

# PART IV.

# MEDICAL MISCELLANY.

*Reports, Transactions, and Scientific Intelligence.*

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

## SECTION OF OBSTETRICS.

President—A. V. MACAN, M.B.
Sectional Secretary—JOHN H. GLENN, M.D.

*Friday, May 24, 1901.*

The PRESIDENT in the Chair.

### *A Case of Sarcoma of the Vulva.*

DR. T. HENRY WILSON said sarcoma, attacking the genital organs, is of comparative rarity—at any rate as a primary growth; but sarcoma of the vulva is very much more infrequent than of the vagina. There is little information on the subject to be obtained from text-books. Most authors agree that the disease is rare, that the most usual variety found is the melanotic or the spindle-celled, and that it is a disease of old age. The glands are said to be affected early, and it is generally stated to recur after operation, and to end in a fatal result within a short period. Dudley reports a case, however, in which he operated for a sarcoma (spindle-celled) of the mons veneris, and in which there was no recurrence after fifteen years.

The following case came under my care in the Richmond Hospital in July, 1900:—

Patient, aged 34, not married, complained of "falling of the womb." She stated that the womb had been completely outside for ten months, and that it had been ulcerated. I found a smooth tumour, about the size of a large hen's-egg, growing from the fossa navicularis; it was covered with mucous membrane, and was hard and inelastic. On the most dependent surface was a bright red patch as large as a shilling, which resembled a cervical erosion. The tumour sprang from a base about 1½ by 1 inch. I believed it to be a myoma, and excised it by making two elliptical incisions deep into the perineal body. The wound was closed with three silkworm gut sutures passed through the whole depth of the wound.

Dr. Earl kindly examined the specimen microscopically, and states that it is a spindle-celled sarcoma.

I examined the patient a few days ago and found a small tumour about as large as a pea on the posterior vaginal wall, just inside the hymen. I do not remember seeing it when I operated on her, but I will keep her under observation. I could detect no glandular enlargement either in the pelvis or in the inguinal region.

Dr. Jellett said he did not gather whether the tumour was entirely below the hymen or not. A few days ago he was shown a microscopic section of a small round-celled sarcoma of the forearm, which formed a tumour very closely resembling the present case, and which was removed under the idea that it was a small fibrous tumour of the skin.

Dr. Macan asked whether Dr. Wilson thought the small growth might not have been there when he operated originally?

Dr. E. H. Tweedy said the case emphasised the necessity for sending almost every tumour one met with to a microscopist. The tumour looked uncommonly like a fibroid, and he would like to know what reason Dr. Wilson had for getting it examined. Was it his routine practice to have every tumour examined, or was there anything that roused his suspicion?

Dr. Wilson, in reply, said it was not his practice to have every tumour examined microscopically, but he had never known of a myoma in that region, and he wanted to make sure it was a myoma. The diagnosis was amended by the pathologist, and consequently the patient was told that she should be examined occasionally, as the tumour might recur. The tumour was altogether outside the hymen.

The Section then adjourned.

# SANITARY AND METEOROLOGICAL NOTES.

Compiled by Sir J. W. Moore, B.A., M.D. Univ. Dubl.;
F.R.C.P.I.; F. R. Met. Soc.;
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

## Vital Statistics

*For four weeks ending Saturday, August* 10, 1901.

## IRELAND.

### Twenty-two Town Districts.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending August 10, 1901, in the Dublin registration area and the twenty-one principal provincial urban districts of Ireland was 20·9 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,079,708. The deaths registered in each of the four weeks ended Saturday, August 10, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

| Towns, &c. | Week ending | | | | Average Rate for 4 weeks | Towns, &c. | Week ending | | | | Average Rate for 4 weeks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | July 20 | July 27 | Aug. 3 | Aug. 10 | | | July 20 | July 27 | Aug. 3 | Aug. 10 | |
| 22 Town Districts | 19·7 | 19·5 | 18·2 | 20·9 | 19·6 | Lisburn - | 22·8 | 9·1 | 13·7 | 31·9 | 19·4 |
| Armagh - | 20·7 | 0·0 | 13·8 | 6·9 | 10·4 | Londonderry | 18·3 | 20·9 | 15·7 | 15·7 | 17·7 |
| Ballymena | 9·6 | 9·6 | 0·0 | 4·8 | 6·0 | Lurgan - | 8·9 | 22·1 | 22·1 | 13·3 | 16·6 |
| Belfast - | 24·4 | 19·6 | 17·4 | 24·7 | 21·5 | Newry - | 12·4 | 37·3 | 12·4 | 12·4 | 18·6 |
| Clonmel - | 35·8 | 91·9 | 10·2 | 10·2 | 37·0 | Newtownards | 28·6 | 17·2 | 11·4 | 22·9 | 20·0 |
| Cork - | 21·3 | 13·7 | 19·2 | 20·6 | 18·7 | Portadown - | 10·4 | 15·6 | 15·6 | 5·2 | 11·7 |
| Drogheda - | 28·6 | 8·2 | 20·4 | 24·5 | 20·4 | Queenstown | 6·6 | 19·8 | 0·0 | 19·8 | 11·6 |
| Dublin - (Reg. Area) | 18·4 | 20·6 | 20·6 | 22·4 | 20·5 | Sligo - | 4·8 | 4·8 | 28·8 | 4·8 | 10·8 |
| Dundalk - | 31·9 | 8·0 | 16·0 | 16·0 | 18·0 | Tralee - | 10·6 | 5·3 | 15·9 | 26·6 | 14·6 |
| Galway - | 23·3 | 3·9 | 23·3 | 7·8 | 14·6 | Waterford - | 7·8 | 17·5 | 7·8 | 13·6 | 11·7 |
| Kilkenny - | 9·9 | 14·9 | 49·7 | 5·0 | 19·9 | Wexford - | 14·0 | 18·7 | 23·4 | 18·7 | 18·7 |
| Limerick - | 5·5 | 27·4 | 11·0 | 12·3 | 14·1 | | | | | | |

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases registered in the 22 districts during the week ended Saturday, August 10, were equal to an annual rate of 3·9 per 1,000—the rates varying from 0·0 in fourteen of the districts to 5·7 in Newtownards. Among the 166 deaths from all causes registered in Belfast are 2 from measles, 2 from diphtheria, 7 from enteric fever, and 23 from diarrhœa; and the 10 deaths in Cork include 2 from typhus and 2 from diarrhœa.

## DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of the Area, estimated to the middle of 1901, is 375,076, being made up of the following:—City, 290,837; Rathmines, 32,589; Pembroke, 25,563; Blackrock, 8,727; and Kingstown, 17,360.

In the Dublin Registration Area the births registered during the week ended Saturday, August 10, amounted to 153—81 boys and 72 girls; and the deaths to 166—89 males and 77 females.

### DEATHS.

The deaths, which are 3 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·1 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the area, the rate was 22·4 per 1,000. During the thirty-two weeks ended Saturday, August 10, the death-rate averaged 27·7.

In the week ended Saturday, August 10, 39 deaths from zymotic diseases were registered. This number is 2 in excess of the average for the corresponding period in the past 10 years. Diarrhœa caused 33 deaths—3 of these were of children under one month, 24 were in the age period of one month but under one year, 5 were between one and 5 years, and one death occurred in a person aged 77 years. Diphtheria caused 2 deaths and enteric fever one death.

There were 31 deaths from tubercular disease—20 from pulmonary tuberculosis, 4 from tabes mesenterica, 3 from tubercular meningitis, and 4 from tuberculosis (scrofula).

Diseases of the respiratory system caused 11 deaths, which number includes 5 from bronchitis and 5 from pneumonia. This figure is 4 below the average for the corresponding period of the past 10 years.

The deaths of 6 children were registered as being due to convulsions. One of these children was under one month, and 5 were over one month but under one year in age.

There were 8 deaths from apoplexy, and 16 from other diseases of the brain and nervous system (exclusive of convulsions).

Diseases of the circulatory system caused 17 deaths.

Eight deaths were caused by cancer.

There were 8 deaths from accidental violence, including 3 from drowning.

In 9 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 7 infants under one year old.

Seventy-three of the persons whose deaths were registered during the week under discussion were under 5 years of age (58 being infants under one year, of whom 11 were under one month old), and 30 were aged 60 years and upwards, including 10 persons aged 70 and upwards, of whom 2 were octogenarians.

## STATE OF INFECTIOUS DISEASE IN DUBLIN.

### (1.) Cases of Infectious Diseases Notified to the Public Health Committee of the Corporation.

Sir Charles Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of Infectious Diseases in the City of Dublin, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | | |
|---|---|---|---|
| Week ending | July 20, 1901 | ... ... | 55 cases. |
| " | July 27, " | ... ... | 57 cases. |
| " | August 3, " | ... ... | 38 cases. |
| " | August 10, " | ... ... | 43 cases. |

Of the 43 cases notified in the last week of the period, 12 were erysipelas, 8 enteric fever, 6 scarlatina, 8 measles, 5 continued fever, and 4 diphtheria.

### (2.) Cases of Infectious Diseases in Rathmines Urban District.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | |
|---|---|---|
| Week ending | July 20, 1901 ... ... | 2 cases. |
| ,, | July 27, ,, ... ... | 4 cases. |
| ,, | August 3, ,, ... ... | 2 cases. |
| ,, | August 10, ,, ... ... | 5 cases. |

Of the 5 cases notified in the last week, 2 were scarlet fever, 2 typhoid fever, and one choleraic diarrhœa.

### (3.) Cases of Infectious Diseases in Pembroke Urban District.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Pembroke, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | |
|---|---|---|
| Week ending | July 20, 1901 ... ... | 3 cases. |
| ,, | July 27, ,, ... ... | 27 cases. |
| ,, | August 3, ,, ... ... | 10 cases. |
| ,, | August 10, ,, ... ... | 9 cases. |

Of the 9 cases notified in the last week, 2 were erysipelas, one scarlet fever, 2 measles, and 4 whooping-cough.

### (4.) Cases of Infectious Diseases under Treatment in Dublin Hospitals.

Seven cases of enteric fever were admitted to hospital during the week ended Saturday, August 10; 3 were discharged, one death occurred, and 26 cases remained under treatment at the close of the week.

Ten cases of scarlatina were admitted to hospital, 9 were discharged, and 49 remained under treatment at the close of the week. This number is exclusive of 21 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Three cases of diphtheria were admitted to hospital, 3 were discharged, 2 deaths occurred, and 13 cases remained under treatment at the close of the week.

One case of typhus fever was admitted to hospital, 2 cases were discharged, and 3 cases remained under treatment at the close of the week.

Three cases of measles were admitted to hospital, one was discharged, and 21 remained under treatment at the close of the week.

In addition to the above-mentioned zymotic diseases recognised as such, 2 cases of pneumonia were admitted to hospital, 4 were discharged, and 13 remained under treatment at the close of the week.

## STATE OF INFECTIOUS DISEASE IN BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | |
|---|---|
| Week ending July 20, 1901 ... | ... 125 cases. |
| „ July 27, „ ... | ... 132 cases. |
| „ August 3, „ ... | ... 123 cases. |
| „ August 10, „ ... | ... 156 cases. |

Of the 156 cases notified during the week ended August 10, 95 were enteric fever, 4 erysipelas, 3 diphtheria, 50 continued fever, one scarlet fever, 2 typhus fever, and one puerperal fever.

## ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, August 10, in thirty-three large English towns, including London (in which the rate was 18·8), was equal to an average annual death-rate of 22·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·2 per 1,000, the rate for Glasgow being 20·8, and for Edinburgh 17·7.

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## METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat.* 53° 20′ *N., Long.* 6° 15′ *W., for the Month of July,* 1901.

| | |
|---|---|
| Mean Height of Barometer, - - - | 30·032 inches. |
| Maximal Height of Barometer (7th, at 9 a.m.), | 30·296 „ |
| Minimal Height of Barometer (24th, at 9 a.m.), | 29·589 „ |
| Mean Dry-bulb Temperature, - | 62·3°. |
| Mean Wet-bulb Temperature, - - | 58·7°. |
| Mean Dew-point Temperature, - - | 55·6°. |
| Mean Elastic Force (Tension) of Aqueous Vapour, | ·445 inch. |
| Mean Humidity, - - - - | 79·5 per cent. |
| Highest Temperature in Shade (on 17th), - | 81·8°. |
| Lowest Temperature in Shade (on 7th), - | 49·9°. |
| Lowest Temperature on Grass (Radiation) (7th), | 43·9°. |
| Mean Amount of Cloud, - - - | 67·5 per cent. |
| Rainfall (on 13 days), - - | 2·080 inches. |
| Greatest Daily Rainfall (on 1st). - - | ·747 inch. |
| General Directions of Wind, - - - | N.W., N.E. |

### *Remarks.*

A warm and pleasant summer-like month, in many respects resembling July, 1900, which was also warm, though with a much heavier rainfall—4·519 inches as against 2·080 inches. The total amount of sunshine was 176·2 hours in the Phœnix Park. It was estimated at 208·1 hours in the City of Dublin. The week ended Saturday, 20th, was hot and dry, the mean temperature being 68·5° in London. The following week was marked by frequent thunderstorms and heavy rains in central England. At Oxford 4·38 inches of rain fell during this unsettled period, and in London (Brixton) the measurement was 2·98 inches. During a violent thunderstorm on Thursday, the 25th, 1·98 inches were measured at Westminster in 3½ hours, whereas only 0·05 inch fell at Greenwich.

In Dublin the arithmetical mean temperature (63·5°) was above the average (60·6°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 62·3°. In the thirty-six years ending with 1900, July was coldest in 1879 ("the cold year") (M. T.=57·2°). It was warmest in 1887 (M. T.=63·7°); and in 1868 ("the warm year") (M. T.=63·5°). In 1900 the M. T. was 63·4°.

The mean height of the barometer was 30·032 inches, or 0·117 inch above the corrected average value for July—namely, 29·915 inches. The mercury rose to 30·296 inches at 9 a.m. of the 7th, and fell to 29·589 inches at 9 a.m. of the 24th. The observed range of atmospheric pressure was, therefore, only 0·707 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 62·3°, or 6·2° above the value for June, 1901. Using the formula, *Mean Temp.*= *Min.* + (*Max.* — *Min.* × ·465), the value was 63·0°, or 2·8° above the average mean temperature for July, calculated in the same way, in the twenty-five years, 1865–89, inclusive (60·2°). The arithmetical mean of the maximal and minimal readings was 63·5°, compared with a twenty-five years' average of 60·6°. On the 17th the thermometer in the screen rose to 81·8°—wind, S.; on the 7th the temperature fell to 49·9°—wind, E. The minimum on the grass was 43·9° on the 7th.

The rainfall was 2·080 inches, distributed over 13 days. The average rainfall for July in the twenty-five years, 1865–1889, inclusive, was 2·420 inches, and the average number of rainy days was 17·2. The rainfall, therefore, and also the rainy days, were below the average. In 1880 the rainfall in July was very large—6·087 inches on 24 days; in 1896, also, 5·474 inches fell on 18 days. On the other hand, in 1870, only ·539 inch was measured on 8 days; in 1869, the fall was only ·739 inch on 9 days; and in 1868, ·741 inch fell on but 5 days. In 1900, 4·519 inches fell on 15 days.

High winds were noted on only 3 days, and never attained the force of a gale. Temperature reached or exceeded 70° in the screen on 16 days, compared with 14 days in July, 1900. In July, 1887, temperature reached or exceeded 70° in the screen on no fewer than 17 days. In 1888, the maximum for July was only 68·7°.

There were thunderstorms on the 21st, 24th, and 25th. Lightning was seen on the 21st, 26th, and 27th. The atmosphere was foggy on the 1st and 8th.

The rainfall in Dublin during the seven months ending July 31st amounted to 11·432 inches on 93 days, compared with 17·609 inches on 129 days in 1900, 14·416 inches on 107 days in 1899, 13·060 inches on 106 days in 1898, 15·600 inches on 125 days in 1897, 13·328 inches on 102 days in 1896, 16·785 inches on 96 days in 1895, 7·935 inches on 80 days in 1887, and a twenty-five years' average of 14·733 inches on 112·6 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in July was 2·390 inches on 10 days, compared with 5·140 inches on 15 days in 1900, 3·480 inches on 14 days in 1899, 1·145 inches on 6 days in 1898, 1·625 inches on 10 days in 1897, 5·726 inches on 16 days in 1896, and 3·680 inches on 16 days in 1895. Of the total rainfall ·590 inch fell on the 23rd, ·785 inch on the 24th, and ·530 inch on the 1st. The total fall since January 1 has been 16·060 inches on 85 days, compared with 23·331 inches on 120 days in 1900, 22·990 inches on 109 days in 1899, 14·645 inches on 94 days in 1898, 19·750 inches on 116 days in 1897, 13·082 inches on 77 days in 1896, and 17·950 inches on 83 days in 1895.

At Cloneevin, Killiney, Co. Dublin, the rainfall in July was 2·80 inches on 13 days, compared with a sixteen years' (1885-1900) average of 2·550 inches on 15·3 days. On the 24th the rainfall was ·78 inch. In July, 1900, 4·56 inches fell on 16 days; in 1899, 3·48 inches fell on 17 days; in 1898, ·84 inch fell on 7 days; in 1897, 1·28 inches fell on 10 days; in 1896, 6·72 inches on 20 days; in 1895, 3·58 inches on 17 days; in 1885, only ·70 inch on 9 days. Since January 1, 1901, 13·54 inches of rain have fallen on 95 days at this station, compared with 18·38 inches on 129 days in the corresponding 7 months of 1900.

At the Railway Hotel, Recess, Connemara, Co. Galway, the rainfall was only 1·659 inches on 15 days, compared with 3·793 inches recorded in July, 1900, on 19 days. The largest measurement in 24 hours was ·320 inch on the 16th.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, County Dublin, the rainfall was 2·65 inches on 11 days, 1·04 inches being measured on the 1st. The mean temperature was 64·1°, the range being from 81° on the 17th to 50° on the 7th.

At Broomfield, Howth, the rainfall was 1·44 inches on 11 days.

At the Ordnance Survey Office, Phœnix Park, Dublin, rain fell on 14 days to the amount of 1·905 inches, the greatest rainfall in 24 hours being ·760 inch on the 1st.

At Cork the rainfall was only 0·47 inch on 10 days, or 2·23 inches below the average.

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## PULMONARY EMBOLISM AND ANÆSTHETICS.

According to Stengel (*American Journal of the Medical Sciences*, August, 1901) pulmonary embolism following the use of ether or chloroform as anæsthetics is generally the result of preexisting disease of the myocardium. It occurs more frequently after operations for uterine myomata than under any other circumstances, the sequence of events being: thrombus of the pelvic vessels, pulmonary embolus, pneumonia, death. Sometimes these events follow one another with astonishing rapidity. The rôle played by the heart in this process is that of a predisposing cause. In an interesting discussion of cardiac accident after anæsthetisation, Stengel states that fatty degeneration of the myocardium after chloroformisation must be an occurrence of the greatest rarity, if, indeed, it ever happens. This is indicated by the thousands of chloroformisations in which no suspicion or subsequent trouble of that nature arises. The direct and rapid entrance of the inhaled chloroform into the blood would certainly produce such a result frequently, if the drug is ever capable of producing fatty degeneration of tissues.

## CORK INTERNATIONAL EXHIBITION, 1902 (MAY TO NOVEMBER).

By an advertisement in another page it will be seen that application forms for space can now be had from the Hon. Secretary. It is desirable that the industries of the country should be fully represented, and every effort should be made to secure that the Exhibition will mean a stimulus to our languishing industries, and a permanent benefit to the country at large.

# PERISCOPE.

## ETHER INHALATION IN HEART DISEASE.

**Finney** (*American Journal of the Medical Sciences*, August, 1901) is convinced from clinical experience that in many cases of organic heart disease the administration of ether not only produces no deleterious effects, but seems to be of temporary benefit to the cardiac condition. He thinks the greatest element of danger in such cases is to be found in careless or unskilled administration, not in the ether *per se*. In a discussion of the safest anæsthetic to use in diseases of the heart, Hare, in the same journal, states that the cardio-vascular system of patients who are going to be anæsthetised should be more carefully studied than is customary. Ether greatly increases the arterial tension, and where the latter is high the administration of ether is directly contra-indicated. Hare states that very few people, even with grave cardiac and vascular disease, die as the direct effect of an anæsthetic. If statistics were looked into, it would be found that a larger number of people die at stool or on going upstairs when suffering from disease of the heart than from anæsthesia. He thinks that the majority of anæsthesia accidents are the results of the shock of the operation, and not of the anæsthetic.

## THE TRACHEAL TUG.

**Sewall** (*American Journal of the Medical Sciences*, August, 1901) has made a careful study of the tracheal tug, and concludes that it is far from being pathognomonic of aneurysm of the aorta. He proves that in many instances it is associated with and dependent upon adhesions of the left pleura, also that in the normal individual descent of the heart with inspiratory movement of the diaphragm may so press the aortic arch upon the left bronchus as to impart to the trachea the aortic pulse, recognisable at the larynx as a palpable tug of greater or less distinctness.

## HEART DISEASE AND SURGICAL OPERATIONS.

**In** a study of pre-existing heart disease in reference to surgical operations, Mayo (*American Journal of the Medical Sciences*, August, 1901) states that between the ages of ten and forty valvular heart disease is usually well compensated, and, if the heart action is easy and the general circulation is in pretty good condition, operative risk is not great. If the valvular lesion is associated with myocarditis, the danger of operation is very greatly increased, and under such circumstances only operations of urgency are justifiable.

### DECORTICATION OF THE LUNG FOR CHRONIC EMPYEMA.

DR. GEORGE RYERSON FOWLER gives (*Medical News*, June 15, 1901) a summary of the first case in which he dissected out and removed the pleura, on October 7, 1893, and three months before Delorme's first operation. Dr. Fowler adds a description of subsequent cases, and draws the following conclusions:—"(1) Decortication of the lung is an operation adapted to all cases of old empyema in which extensive and pre-operatively discoverable tuberculous lesions of the lungs are not present, and in which the patient's condition will permit of a major operation. (2) It may be advantageously substituted for Estlander's operation in the majority of instances in which the latter has been considered, up to the present time, as being indicated, since it is more a rational procedure, in that it combines the advantages of restoration of function of the lung, so far as this is possible, with closure of the empyemic cavity. (3) It should replace Schede's operation in all cases. (4) The method by extirpation of the diseased portion of the pleural membrane, including the visceral, cortical, and diaphragmatic portions, is the operation of choice. (5) Failing this, visceral pleurectomy should be selected. (6) Pleurotomy, with simple detachment of the visceral layer of the diseased pleural membrane, gives sufficiently good results to warrant the surgeon in resorting to this procedure in cases in which the condition of the patient will not permit of the application of the other and more desirable methods. (7) Whatever operative method is adopted, as complete access to the cavity of the chest as possible should be obtained, and rapid closure of the opening in the chest-wall afterward secured, since the complete re-expansion of the lung must depend largely upon the normal respiratory movements. (8) Pulmonary or respiratory exercises should not be neglected in the after-treatment, since these aid greatly in the restoration of the function of the lung."

# THE DUBLIN JOURNAL

OF

# MEDICAL SCIENCE.

OCTOBER 1, 1901.

## PART I.

## ORIGINAL COMMUNICATIONS.

ART. X.—*Remarks on Tuberculosis and its Treatment.*[a] By DR. BARADAT, Consulting Physician at Cannes (French Riviera).

IN the case of tuberculosis, as in that of every infectious disease, two factors must be taken into consideration.

The first of these is the infectious agent, the morphological and biological characters of which are so well known now-a-days; the second is the soil in which the agent has developed itself, and whose characteristics are either acquired or hereditary.

All rational medication must, to be complete and really efficacious, apply to these two factors, and take into account all the elements which arise in a given case. For, as Leudet says, tuberculosis presents, in its varied manifestations, special idiosyncrasies, differing absolutely from one individual to another.

Under these conditions only can we hope to be victorious over this dread disease.

As a matter of fact, a review of the new methods of treatment employed in dealing with tuberculosis reveals to us the fact that, although these methods are, without doubt, of real value, they are efficacious only against certain given systems, and possess no influence over the whole of the phenomena which are to be overcome; certainly, they have special indications, but they are insufficient, because their field of action is but a limited one.

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[a] Read before the British Congress on Tuberculosis and the Prevention of Consumption, London, July, 1901.

Amongst these indications,' the comparative effects of which we shall examine later on, some are destined to improve and to strengthen the soil; others, on the contrary, are specific agents; they give rise to the diapedesis of the white globules, thus multiplying the means of defence with which the organism is provided in its struggle against the bacilli.

A thoroughly rational treatment should take both factors into account—that is to say, the medication employed should act in two ways, both as a dynamogenetic agent and as a specific. One is generally inclined to look upon each new method of treating tuberculosis as one that will immediately effect a radical cure of this terrible disease, without taking into account either the infectious agent and its toxin, or the soil on which these latter re-act.

We must oppose this tendency, and attempt a true, careful, and impartial appreciation of the new medications.

Let us, for instance, take the case of an anæmic patient: the Koch bacillus has invaded his organism, but still remains latent; if we leave this patient to himself his anæmia will increase, his digestive activity will diminish, his strength dwindle away, and assimilation will be reduced to a minimum; there will be, as has truthfully been said, a failure of the whole organism.

What must be done to meet such a case?

Firstly, the organism must be strengthened, nutrition favoured; it is here that a use is found for medications tending to produce these effects, such as arsenic in its more easily assimilable forms (cacodylates), tannin, iodine, cod liver oil, salt lotions, alcohol frictions, sea-baths, a hygienic treatment.

By these means the bacilli will be kept under, their action neutralised, and as long as an equilibrium is maintained between the means of defence and the attack, the patient will live.

But a fatal time will come when the bacilli will gain the upper hand, and this under the influence of varied causes, to which an organism already infected will have to pay a large tribute, such as physiological troubles, grief, repeated bronchitis, influenza, measles, scarlatina, and, especially in the case of young subjects, intense physical and intellectual strain—too much bicycling, too much fast living, an excess of emulation and rivalry in examinations and competitions.

So that this treatment of the soil, if we may be allowed this expression, which seemed at first so efficacious, had but an ephemeral effect; enough had not been accomplished, the disease should have been attacked in its very essence, the bacilli and their toxin destroyed.

It is the same with all medications in the case of tuberculosis, and I should willingly call them partial medications.

Let us consider those that address themselves to the soil, the constitution of the subject.

Firstly, we hold that a hygienic treatment should be the basis, the indispensable foundation-stone of every medication; without it, they will all fail.

As Professor Letulle so picturesquely puts it, the patient must be "*centrifuged,*" he must be taken away from large towns, from the centres where diseased persons are collected; he must be given the pure, fresh, invigorating air of the seaside or of the mountains; he must have in profusion sunlight, an agent as salutary to man as it is destructive to microbes.

In our opinion, this hygienic treatment will best be realised by means of *free sanatoria*, Landouzy's home sanatoria, such as we find them scattered, in the shape of villas, along our sun-bathed Mediterranean shores. There all the required conditions, not only hygienic, but moral and inspiring as well, can be fulfilled.

In private sanatoria for the rich, the culinary arrangements for such a large number of people are necessarily unsatisfactory, the cooking is less carefully attended to, the dishes are less carefully prepared, and less adapted to individual wants, to stomachs often fatigued and upset. As a matter of fact, the question of food is of vital importance in the treatment of a disease in which super-alimentation plays such an important part. The private sanatorium should be reserved for the impulsive, for those who are incapable of energy and self-direction.

Besides, how many of these sanatoria are carelessly conducted! How many paying sanatoria are under the control of commercial managers, who allow alcohol in all its forms to be freely distributed! who close their eyes to promiscuities which are dangerous, often immoral and always harmful to patients who must carefully husband their strength.

On the contrary, we willingly acknowledge the usefulness of the sanatorium destined for the poor. In their case, hygienic discipline will always be maintained, for there will be no reason for unbending before the perspective of rapid gains and big dividends; on the other hand, the poor will always find at a sanatorium better feeding than at home.

As for the medical treatment, much has been said of cacodylate of sodium.

We shall not attempt a complete study of this substance. The most important thing for us is to be thoroughly acquainted with its real value. Its action and its efficiency must be measured by the light of the experience of numerous observers, and of our own. Its promoters were wrong, in our opinion, to call cacodylate of sodium a specific agent against tuberculosis. As against the numerous favourable observations, and which we do not doubt in the least, of Messrs. A. Gauthier, Renaut, Rendu, Letulle and others, we have to set off many others, equally unimpeachable, and where the results on tuberculosis have been *nil.*

In the course of our practice, we currently employ cacodylate of sodium; its effects have proved excellent in cases of anæmia, of ganglionic and lymphatic persons, of chlorosis; in such cases, we have observed a regular revival of the physiological functions, an increase of appetite, an absorption of glands. On the contrary, we have obtained less favourable results in cases of ulcerous and cavity tuberculosis.

Burlureau, in a recent and thoroughly complete study on cacodylate, has come to the same conclusion. "As for tuberculosis," he says, "I regret to have to say that, contrary to the opinion of Professor Gauthier, it is in this disease that cacodylate has given me the least favourable results. Out of twenty-nine cases of pulmonary tuberculosis, I have only once obtained a really favourable effect, and that was but temporary."

Cacodylate will be specially useful for the predisposed, for those incipient cases which were so difficult to diagnosticate, and which we have now learned to recognise.[a]

As for the vanadates, they have not fulfilled the expectations formed of them; but this is partly due to the difficulty experienced in obtaining thoroughly reliable products. The same must be said of certain artificial serums, which must be classed among the soil strengtheners, and are wanting in bactericidal powers, or rather in the power of exciting diapedesis and phagocytosis.

We now come to the raw meat treatment.

The experimental researches of Richet and Héricourt have proved that raw meat juice acts, not as a strengthening agent, but as an antitoxin. This antitoxin would neutralise the effects of the tuberculosis toxin.

This juice is the muscular plasma, obtained either by the press or by congelation followed by rapid thawing of the muscular tissue.

The following is the method I have adopted at Cannes in the case of patients whom I submit to this treatment; the daily quantity of mashed meat is 800 grs. (about 28 ozs.); the patient takes as much as he can, the rest of the meat is pressed, in order that the juice may be extracted.

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[a] For instance, Landouzy, Grancher, Sanchez have revealed to us the delicate stethoscopic signs of the period of germination; Bard and Faisans have showed us the importance of the cardiac rhythm, of tachycardia; Roussel and Boix that of the scapulo-thoracic amyotrophia; Bouchard, Beclere, Kelsch, Maragliano have taught us the radioscopic signs of incipient tuberculosis; Arloing, Mongour, Courmont have established on a sure basis the early diagnosis of tuberculosis by sero-diagnosis by agglutination; Albert Robin and Binet give us the same certitude by the analysis of the respiratory chemism; Sirot and Fink by the observations of the effects produced by injections of artificial serum: Gaube (of Gers) by the study of the demineralisation of the tissues.

The plasma must be taken immediately after having been prepared, otherwise one risks swallowing a putrefied and toxic substance.

Although this method has given me excellent results, I consider it difficult to put into every day practice.

It possesses many inconveniences; for one thing, it is not within everybody's reach; it is costly in preparation, and requires 800 to 1500 grs. of meat daily; it is supported with difficulty by many patients; it requires constant supervision, for this meat juce soon putrefies and becomes toxic. Injected under the skin of an animal, it causes death in a few minutes.

Experiments with this anti-tuberculous plasma have been made in the laboratory of Messrs. Richet and Héricourt. These attempts at hypodermic injections of an immunising and even curative liquid led us to read once more the already old but very complete works on the bactericidal or antitoxic properties of the blood of animals that are refractory, or seemingly refractory, to tuberculosis.

The medical literature of 1890 to 1895 shows us how this question has been strenuously discussed and deeply criticised.

However, from these works we glean the following fact: that the blood of certain animals confers on other animals immunity from tuberculosis, and may even cure this disease. "As far back as 1888," says Professor Bouchard, in writing to Mr. Bertin, one of the promoters of anti-tuberculosis sero-therapy, "I expressed the idea that vaccines were destined to play a part, not only in the prophylaxis, but also in the treatment of this disease."

For my own part I have no hesitation in attaching myself to the method of anti-tuberculous sero-therapy introduced, at about the same time, in 1889, by Richet and Héricourt, and by Bertin and Picq, for I think that therein lies the solution, so long sought, of the problem of the cure of tuberculosis.

Naturally, with this medication just as with any other, we must not wait for the patient to be emaciated, to present digestive troubles and cachexia before treating him.

For, we insist on this point, tuberculosis is not consumption. A consumptive or phthisical person is one in whose case the Koch bacillus, after having terminated its progressive career, has slowly brought on the suppurative destruction of the cells attacked, and in this mass of destroyed matter you will find all the processes provoked by the staphylo-, the strepto-, and the pneumococcus, working together with the Koch bacillus.

In this case, you have phthisis, consumption, the hectic fever which brings on a fatal issue; imagine that, by some means, you could at this period destroy the bacilli of tuberculosis, your patient would still succumb to the strepto-, the staphylo-, and the pneumococcus.

As a matter of fact, says Landouzy, it is this idea of helping those who are in the incipient stage, at a time when the germs of secondary infection have not yet attacked them, that has led medical men to make use of "the immunising agents that are antitoxic or bactericidal owing to their strengthening action on phagocytosis."

This science of sero-therapy, which we fairly owe entirely to the French school, has been perfected by Pasteur's most renowned disciples—Drs. Duclaux, Roux, Grancher, Nocard, Metschnikoff, Yersin, Calmette, Leroux, Charrin, Marmorek, Boinet, and many others, among whom we must mention Bertin and Picq, who were, together with Richet and Héricourt, the promoters of modern sero-therapy.

The use of natural serum has given me unexpected results in serious cases of tuberculosis, and I have always been surprised to find that this method of treatment is not better known; natural serum seems to me to fulfil all the required conditions, for it is both dynamic and bactericidal.

As we know, in the case of tuberculosis, the bacillus acts as a destructive force, but its action is strengthened by that of other destructive forces due to the soil. In one case it will be anæmia, in another heredity, in another influenza, or intellectual or physical strain.

So, with these generalities, what are the characters required of a therapeutic agent against tuberculosis? We admit the stimulating and regenerative properties of the general tonics, cacodylates, phosphates, cod liver oil, etc.; we will even allow the antitoxic property of meat juice, but has anyone the right to say that each of these agents fulfils the two conditions necessary to the cure of tuberculosis? Certainly not, for they are either simply stimulating and strengthening, or simply antitoxic. Bertin and Picq's serum (goat's serum) seems to me, on the other hand, to be at the same time tonic, antitoxic, and bactericidal; it is the one we make use of.

As a matter of fact, daily experience tends to prove that every serum is dynamogenetic, and therefore a general strengthening agent.

This is proved daily by the use by artificial serum in the case of serious hæmorrhage, of anæmia subsequent to chronic diseases, of traumatic shock consecutive to operations. In taking into account, however, the comparative value of the two serums, natural and artificial, we find that a very small quantity of the former produces an intense therapeutic effect, whilst the same effect can be obtained only by employing a double or even triple dose of artificial serum. There is here a *quid divinum*, due evidently to the intimate composition of natural serum. No one now-a-days denies the dynamogenetic action of serum—it is a recognised fact.

All we have to do is to repeat this action as often as required in order to maintain to a remarkable degree the resistance and the vitality of the patient.

Whilst awaiting experiments destined to throw light on the still obscure question of the mode of action of serums, we give preference to the theory propounded by Metschnikoff, who looks upon them, not as antitoxic, but as stimulating agents of phagocytosis—in other words, as *stimulines*, provokers of organic resistance.

Therefore, as we admit that the microbial destruction and the arrest of infection are due to phagocytosis, the aim of our therapy must be to increase the activity of the phagocytes, in order that they may the more easily accomplish their mission. Moreover, the happy results that we have obtained last winter by means of natural sero-therapy lead us to believe that this is the real and only effective method of realising the cure of tuberculosis, especially in its early stages, now that the means of diagnosis which we possess permit us to discover the very earliest symptoms of incipient tuberculosis.

This treatment is absolutely innocuous and easily applied; one hypodermic injection of two cubic centimetres every other day. In some cases, however, in the case of nerve patients especially, I have observed after each injection an exaggeration of cellular activity, showing itself in the shape of fever, erythema, and dyspnœa; in such cases I administered the serum internally. But, in order to obtain the same tonic and stimulating effects, I have to increase the dose, and administer ten cubic centimetres instead of two, as in the case of hypodermic injections.

These results agree with those obtained by Grasset, who concludes by saying that the administration of serum internally is the method of choice, because it is free from danger and gives rise to no accidents. Nevertheless, even with Bertin's serum, we are of opinion that the cacodylate medication should be employed as a precious adjuvant in most cases on the same level as tannin, iodine, and cod liver oil.

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## Art. XI.—*Notes on the Examination of the Blood Corpuscles in Enteric Fever.* By W. A. Winter, M.D. Univ. Dubl.; M.R.C.P.I.; D.P.H.

As there seemed to be some uncertainty about the leucocytic condition of the blood in enteric fever, it occurred to me that it would be interesting to investigate the subject for myself, and as there are few references to the subject in English, I thought that my results might—if published—prove of interest to others.

I am aware, however, that it would be an error to endeavour to draw any definite conclusions from such a limited number of cases as I have had the opportunity of investigating, and also, in counting the various kinds of leucocytes, the number typed was not in all cases sufficient to ensure accuracy.

My original intention had been to confine my observations to the relative proportion of the white cells to the red, and if I discovered any variation in the percentages of the different forms of leucocytes, to make it the subject of a further investigation at a future date; but among the earliest cases I examined were two convalescents who showed a great increase in the percentage of the lymphocytes, and hence I decided to extend the scope of my inquiry.

I may perhaps best explain here that at the time I started this investigation last year I was unaware of the large amount of work that had been done on the subject, especially the results published by Professor Thayer in Vol. VIII. of the "Johns Hopkins Hospital Reports." Had I been aware of these I would have profited by the experience of other investigators, instead of being compelled to work out a plan for myself, which I now feel is not so complete as it ought to be, inasmuch as I made only one examination in each case.

That opinion is not quite settled on the question of the number of leucocytes found in enteric fever may, I think, be gathered from the following extracts:—Ehrlich and Lazarus (1) state "That amongst infectious diseases where a hypoleucocytosis occurs, typhoid fever must first be mentioned." Dreshfield (2), writing on this subject, says: "That the leucocytes are stated by most recent observers to be not only not increased, but rather diminished." Professor Thayer (3) says: "The number of the colourless corpuscles in the peripheral circulation is subnormal throughout the course of typhoid fever." V. Limbeck (4) writes: "That leucocytosis does not occur in enteric fever." Osler (5) teaches "That the number of the colourless corpuscles varies little from the normal standard." Emanuel (6) states that, "While almost every local inflammatory process is accompanied by leucocytosis, enteric fever stands prominently apart in having no leucocytosis." Courment and Barbaroux (7) give as their experience that there does not seem to be any fixed formula for the leucocytic condition in typhoid fever, though they afterwards qualify this statement by saying that in the greater number of their cases a hypoleucocytosis was the rule.

In making the calculations on which this communication is based the following methods were employed:—The red blood corpuscles were counted by means of the Thoma-Zeiss hæmocytometer, the diluting fluid used being a three per cent. solution of sodium chloride. The white elements were estimated indirectly, by means of dry preparations, by the method given by Simon (8). These preparations were generally fixed by heat, but in a few cases I used alcohol or formalin vapour, and the majority were stained by Ehrlich's triacid stain (fuchsin, orange G., and methyl green). In each case four or five preparations of the blood were made, and of these the most successful were used for the estimates, which were based on the examination of at least two slides.

The method employed by Simon in estimating the number of the leucocytes is as follows:—He first counts the erythrocytes in a cubic mm. of blood. He then turns to the dry films, stained as described, and by means of an Ehrlich Leitz eyepiece, or other suitable apparatus by which different, but definite, fractions of the microscope field can be obtained, he counts the number of leucocytes in a large field; he then reduces the size for the field to, say, $\frac{1}{16}$th of its original size, and counts the number of erythrocytes in the small field thus obtained. This operation is repeated for a large number of fields—50 in my cases—and the total number of both corpuscles is added up, the number of the red corpuscles being multiplied by the figure corresponding to the reduction in size of the large fields—16 in the example above cited. The proportion of red to white corpuscles is now known, and hence, knowing the number of red corpuscles in a cubic mm. of blood, the number of leucocytes contained in a similar quantity of blood can easily be obtained.

In estimating the percentages of the different forms of leucocytes a large number—200 to 300, except in a few of the earliest cases—were typed. Table I. gives the results of all the cases examined.

## TABLE I.

| No. | Name | Age | Stage of Case | Number of Red Corpuscles in cubic mm. | Number of Leucocytes in cubic mm. | Proportion of Red Corpuscles to Leucocytes | Percentage of Polymorphonuclear Leucocytes | Percentage of Large Mononuclear Leucocytes | Percentage of Lymphocytes | Percentage of Eosinophile Cells | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Normal Blood = | | 5,000,000 | 7,000 | 700 to 1 | 70–72 | 1 | 22–25 | 2–4 | |
| 1 | T. M. | 26 | 2nd week | 4,400,000 | 1,988 | 2,434–1 | 41·7 | 8·3 | 50·0 | — | Severe case. |
| 2 | E. D. | 29 | ” | 4,800,000 | 3,251 | 1,507–1 | 40·0 | 9·0 | 50·0 | 1·0 | |
| 3 | J. R. | 14 | ” | 3,416,000 | 2,533 | 1,349–1 | 76·4 | 5·8 | 16·2 | 1·6 | |
| 4 | M. M. | 22 | ” | 4,650,000 | 3,390 | 1,373–1 | 71·4 | 7·1 | 16·4 | 5·1 | |
| 5 | P. L. | 37 | ” | 3,680,000 | 3,957 | 930–1 | 58·8 | 5·8 | 35·4 | — | |
| 6 | R. H. | 14 | ” | 4,240,000 | 1,740 | 2,436–1 | 44·0 | 6·0 | 48·0 | 2·0 | |
| 7 | J. Q. | 21 | ” | 5,400,000 | 10,352 | 525–1 | 69·0 | 4·0 | 25·0 | 2·0 | |
| 8 | E. K. | 24 | ” | 3,208,000 | 2,688 | 1,193–1 | 68·0 | 6·5 | 25·5 | — | |
| 9 | W. C. | 24 | ” | 5,200,000 | 4,283 | 1,214–1 | 74·5 | 3·0 | 21·5 | 1·0 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | M. F. | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | |
| 12 | F. J. | 45 | " | 3,760,000 | 6,006 | 630-1 | 70·0 | 5·5 | 25·5 | — | |
| 13 | M. Y. | 21 | " | 3,680,000 | 1,302 | 2,830-1 | 58·3 | 7·2 | 33·5 | 1·0 | |
| 14 | M. H. | 23 | " | 5,000,000 | 9,512 | 525-1 | 67·0 | 8·5 | 22·5 | 2·0 | Had well-marked bronchitis at times. |
| 15 | H. T. | 20 | " | 4,288,000 | 1,629 | 2,755-1 | 54·0 | 8·0 | 37·0 | 1·0 | |
| 16 | M. M'L. | 18 | " | 4,400,000 | 3,656 | 1,203-1 | 50·0 | 7·2 | 42·8 | — | |
| 17 | M. W. | 17 | " | 4,800,000 | 6,191 | 775-1 | 68·2 | 3·5 | 27·2 | 1·1 | |
| 18 | J. D. | 20 | " | 3,968,000 | 11,098 | 357-1 | 62·4 | 9·4 | 24·5 | 3·7 | Apparently uncomplicated. |
| 19 | M. W. | 15 | " | 4,800,000 | 12,893 | 372-1 | 48·2 | 10·7 | 39·3 | 1·8 | |
| 20 | J. D. | 28 | " | 3,760,000 | 6,312 | 595-1 | 66·6 | 11·2 | 18·5 | 3·7 | |
| 21 | A. P. | 25 | " | 4,160,000 | 4,123 | 1,008-1 | 65·0 | 9·5 | 24·5 | 1·0 | |
| 22 | C. R. | 17 | 4th week | 6,000,000 | 6,528 | 917-1 | 66·0 | 14·0 | 20·0 | — | |
| 23 | H. M. | 25 | " | 4,800,000 | 5,708 | 840-1 | 66·0 | 8·0 | 25·5 | 0·5 | |
| 24 | A. S. | 20 | " | 5,500,000 | 14,392 | 382-1 | 80·9 | 6·6 | 10·5 | 2·0 | Apparently uncomplicated. |
| 25 | G. D. | 30 | " | 3,840,000 | 2,658 | 1,444-1 | 57·2 | 12·2 | 28·6 | 2·0 | |
| 26 | W. K. | 37 | " | 3,560,000 | 13,283 | 268-1 | 69·0 | 8·4 | 19·7 | 2·9 | Had a very large quantity of mucus in stools. |
| 27 | A. H. | 14 | " | 4,800,000 | 11,946 | 401-1 | 70·2 | 3·0 | 26·8 | — | A very long case, with chest complications. |

TABLE I.—*continued.*

| No. | Name | Age | Stage of Case | Number of Red Corpuscles in cubic mm. | Number of Leucocytes in cubic mm | Proportion of Red Corpuscles to Leucocytes | Percentage of Polymorphonuclear Leucocytes | Percentage of Large Mononuclear Leucocytes | Percentage of Lymphocytes | Percentage of Eosinophile Cells | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 28 | M. C. | 12 | Convalescent | [*] 2,720,000 | 850 | 3,211-1 | 30·0 | 13·0 | 56·0 | 1·0 | Early convalescent. |
| 29 | C. C. | 6 | ,, | 3,902,000 | 14,426 | 271-1 | 26·3 | 11·7 | 60·1 | 1·9 | |
| 30 | C. B. | 22 | ,, | 2,460,000 | 2,475 | 994-1 | 61·1 | 5·5 | 33·4 | — | Early convalescent. |
| 31 | M. H. | 23 | ,, | 5,200,000 | 23,299 | 223-1 | 53·5 | 4·8 | 40·2 | 1·5 | See 14th Case. Had otitis media at time. |
| 32 | H. T. | 19 | ,, | 4,992,000 | 8,021 | 622-1 | 42·2 | 7·8 | 44·7 | 5·3 | |
| 33 | M. J. | 30 | ,, | 4,160,000 | 9,287 | 447-1 | 58·7 | 10·0 | 25·9 | 5·4 | |
| 34 | L. K. | 28 | ,, | 5,000,000 | 6,347 | 787-1 | 56·0 | 8·0 | 32·0 | 4·0 | |
| 35 | M. M. | 6 | ,, | 4,800,000 | 10,607 | 452-1 | 42·5 | 12·5 | 45·0 | — | |
| 36 | J. M. | 25 | ,, | 4,352,000 | 11,772 | 369-1 | 32·1 | 10·7 | 51·5 | 5·7 | |
| 37 | C. D. | 27 | ,, | 4,584,000 | 9,771 | 467-1 | 47·6 | 7·1 | 42·8 | 2·5 | |
| 38 | M. G. | 23 | ,, | 4,000,000 | 2,634 | 1,578-1 | 30·7 | 12·6 | 53·3 | 3·4 | Early convalescent. |
| 39 | M. T. | 13 | ,, | 4,480,000 | 4,522 | 990-1 | 21·7 | 15·8 | 61·0 | 1·5 | |
| 40 | M. W. | 24 | ,, | 3,520,000 | 7,658 | 459-1 | 55·0 | 7·0 | 37·0 | 1·0 | Early convalescent. |

[*] Normal Blood as in preceding page.

On looking through the above list many points of interest may be noted; for instance, the great variation shown in individual cases will at once attract attention. The variation has been noticed by most observers, and is apparently found apart from any complication that can be detected clinically. Again, it will be observed that while the percentage of the large mononuclear cells is constantly above the normal, that of the eosinophiles is subnormal at all stages. A further point of interest is seen in the cases which clinically showed well-marked complications of an inflammatory nature, for all show a greater proportion of leucocytes than is normal.

Case 28 was very interesting, as on first estimating the leucocytes I found only one lymphocyte in 50 fields of the microscope. Thinking that this must be due to some failure in my staining, I made a second set of preparations the following day. I then found 5 leucocytes in the 50 fields.

Case 31 is also interesting. It shows a well-marked leucocytosis. It is the same case as No. 14. At the time of the second examination there was a slight discharge from the ear, which may have accounted for the large number of leucocytes; but even if this be the case the number is very high, and largely exceeds that found by Professor Thayer in similar cases. Possibly the hyperleucocytosis may in part have been due to the patient being one of those who, even in health, show an abnormally high leucocytic count.

Table II. shows the averages of the different corpuscular elements for the various weeks of the fever. For purposes of comparison I have set them down side by side with those of Professor Thayer (*op. cit.*).

His figures are founded on a very large number of blood examinations; in some stages of the fever over 200 cases were examined. I have taken the liberty of grouping his figures for the first and second weeks of convalescence, and taking the average for the two weeks, because I had failed in my own cases to differentiate between the corresponding weeks of convalescence. In grouping my cases for the purposes of averages I have, of course, omitted Cases 14, 26, 27, and 31, as they could not be looked upon as ordinary cases of enteric fever.

TABLE II.—*To show averages for each week compared with Professor Thayer's results.*

| Week of Illness | Red Corpuscles | White Corpuscles | Proportion of Red to White Corpuscles | Percentage of Polymorphonuclear Leucocytes | Percentage of Large Mononuclear Leucocytes | Percentage of Lymphocytes | Percentage of Eosinophile Cells |
|---|---|---|---|---|---|---|---|
| 2nd week (10 cases) | 4,822,000 | 3,654 | 1,475–1 | 61·4 | 5.8 | 31·5 | 1·3 |
| Thayer's figures | 4,706,855 | 6,207 | | 70·9 | 13·4 | 14·6 | 0·8 |
| 3rd week (10 cases) | 4,121,600 | 5,461 | 1,282–1 | 61·3 | 7·4 | 29·9 | 1·3 |
| Thayer's figures | 4,555,814 | 5,730 | | 66·3 | 11·6 | 21·5 | 0·3 |
| 4th week (4 cases) | 5,035,000 | 7,324 | 895–1 | 67·5 | 10·2 | 21·1 | 1·1 |
| Thayer's figures | 4,187,720 | 5,393 | | 65·0 | 14·4 | 20·1 | 0·4 |
| Convalescent (1st & 2nd week) 12 cases | 4,220,833 | 6,909 | 868-1 | 42·7 | 9·9 | 45·5 | 2·6 |
| Thayer's figures | 4,617,401 | 6,286 | | 55·4 | 16·0 | 25·8 | 2·6 |

I may, perhaps, indicate here that, clinically, most of the cases examined were mild, and none were treated by cold baths, which, according to competent observers, cause a temporary increase in the white blood corpuscles. No conclusions can be drawn from the cases I examined in the fourth week of their fever, because the number of uncomplicated cases (4) is so very small, and the averages are unduly influenced by Case 24, which is unusual.

On comparing the figures shown in Table II. it will be noticed that I have all through found a rather lower average for the erythrocytes than that shown by Professor Thayer. On examining the column referring to the number of leucocytes, attention is at once drawn to the very much lower average I obtained in the second week. This may be due to chance, acting in conjunction with the small number of cases examined. For the third week and the stage of convalescence my figures agree fairly well with those of Professor Thayer.

On examining the percentages of the various forms of leucocytes it will be noted, in addition to the points already indicated when referring to Table I., that the percentage of the polymorphonuclear neutrophile cells is subnormal throughout the disease, and that this reduction is progressive and more marked than that found in the Johns Hopkins Hospital.

When compared with Professor Thayer's, my cases show a lower percentage of large mononuclear cells and a higher percentage of lymphocytes, It is often difficult to decide whether a given leucocyte should be classified with the large mononuclear leucocytes or with the lymphocytes. I adopted the plan of counting doubtful cells among the latter. Professor Thayer draws special attention to this difficulty, and expresses his regret that no reference was made to the classification of these doubtful cells in Ehrlich's last work (9). He further states that he employs the following rule when making a differential count of leucocytes:—"When the nucleus of a mononuclear element is similar in size and shape to those of the lymphocytes, even though the affinity for colouring matter be less, the cell is classified under the small mononuclear elements, until the size of the cell as a whole passes that of the ordinary multinuclear neutrophile." I did not see the above rule until I had completed most of my cases, and thought it better to adhere to my own rule than to change at that stage of my investigation. This difference in classification may to some extent explain the difference in our figures, but can hardly explain the very high percentage of lymphocytes found in the stage of convalescence. With regard to the eosinophile cells, my figures compare so closely with those of Professor Thayer that I think they need no comment.

Without wishing, for reasons already stated, to claim complete accuracy for my results, my cases would tend towards the following conclusions:—

1. The number of the red blood corpuscles gradually

diminishes as the fever progresses, but with the establishment of convalescence regeneration sets in.

2. The number of leucocytes is diminished throughout the course of the fever. This rule does not hold good in all cases, but is so constant that if, in a given case of a non-eruptive fever, the number of leucocytes is normal or subnormal, it would be a strong point in favour of the diagnosis of enteric fever.

3. There is a progressive diminution in the percentage of the polymorphonuclear cells which continues into the stage of early convalescence.

4. The percentage of the large mononuclear leucocytes is increased throughout the whole course of the fever, and continues into the stage of early convalescence.

5. The percentage of the lymphocytes is increased throughout the fever, the increase being most marked in the stage of convalescence.

6. While the fever lasts the percentage of the eosinophile cells is subnormal, but with the establishment of convalescence it again reaches and may even pass the normal level.

The above deductions agree in the main with those of Ehrlich and Professor Thayer, but Courment and Barbaroux (*op. cit.*) hold a different view. Ehrlich (*op. cit.*) states that the leucopenia in enteric fever is due to a decrease in the polymorphonuclear cells, which he attributes not to a destruction of the white cells, but rather to a diminished inflow, brought about by the circulation in the blood of substances negatively chemiotactic to the polynuclear elements.

Courment and Barbaroux hold that the hypoleucocytosis is due to a decrease in the lymphocytes, and that the percentage of the polynuclear leucocytes may be even rather increased. They further state that the most marked decrease in the percentage of lymphocytes is seen in the stage of convalescence. Both these latter statements are directly opposed to my experience.

In conclusion, I would like to express my gratitude to the physicians attached to Sir Patrick Dun's and Cork-street Hospitals, and also to Drs. Parsons and Earl for facilities granted to me in collecting the necessary material on which to found this paper.

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(6) Emanuel. Birmingham Medical Review. Vol XLIX. No. 274. June, 1901. Page 357.

(7) Courment and Barbaroux. Arch. de Phys. et de Pathol. Gén. July, 1900.

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## ART. XII.—*Notes on a Case of Successful Application of the Forceps where Cæsarean Section had been previously performed.*[a] By F. W. KIDD, M.D.; Consulting Surgeon, Coombe Hospital.

I MUST apologise for bringing forward such a short communication, but my only excuse is that, having made an exhaustive search, I could not succeed in finding any similar case recorded.

CASE.—The patient in question was first admitted into the Coombe Hospital on the 3rd of December, 1898. She was then aged thirty-two years. She had been visited at her own home by a student of the hospital on the same date, who had diagnosticated the obstruction.

On admission into hospital, the following condition was observed:—"Cervix was soft, especially the anterior portion; os patulous, so as to admit two fingers; was displaced forward, close to pubis; the posterior wall was convex, caused by a hard growth springing from the body of the cervix; this also caused an enlargement posteriorly, extending towards the promontory of the sacrum; it was regular in outline, and palpably a fibroid growth, seemingly about the size of a goose-egg. The head of the child was misplaced on to the ramus of the pubis, and to the left side. Every endeavour was made to try and raise up the tumour, so as to get it above the rim of the pelvis. This, however, was found impossible, owing to the fact that the tumour sprang from the cervix itself. There remained then but two alternatives—either to perform Cæsarean section, or to remove the tumour that blocked the pelvis by enucleation or morcellement. The child seemed strong, fœtal heart being 134 before operation; membranes were unruptured, nor was there any formation of a contraction ring, so that the case seemed one favourable for Cæsarean section.

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[a] Read before the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, December 21, 1900.

The incision in the abdominal wall extended from three inches above the pubis to two inches above the umbilicus. The placenta was attached beneath the incision "placenta prævia Cæsareana." Immediately the child was delivered, as it seemed semi-asphyxiated, it was handed to Dr. Stevens to Schultz it; he very soon succeeded in getting the child to breathe freely without any assistance. The placenta measured 11 by 7 inches, instead of the normal 7 by 6. The child, a male, weighing between 7¾ and 8 lbs., died on the evening of the third day; it had slight convulsions on the preceding day, had vomited blood, and always had a rigidity of the muscles of the body. An autopsy revealed minute hæmorrhages from the œsophagus and upper portion of the stomach; there was also some changed blood in the stomach cavity itself. Now, it is a query if this blood was the result of the rupture of some small blood vessels, the result of Schultzing? although on this occasion the operation was performed by an assistant of great experience and skill.

The operation was performed by the aid of gas-light, at 2 a.m. in the morning. During convalescence the temperature never went above 99·6°, and only on four occasions did go above 99°. At the time of the operation the tumour was felt filling up to the brim of the pelvis posteriorly. If any attempt had been made to deal with it at the time nothing could have been done but a panhysterectomy; this was deemed inadvisable owing to the weakened condition of the patient, and the lingering hope that the tumour might subsequently be removed through the vagina. At the time of reporting the operation the following remark was made:—"Looking back, I now regret that I had not adopted the precaution of removing the ovaries, or, as has been advocated by Dr. Murdoch Cameron of Glasgow, of tying both the Fallopian tubes." Had such a procedure been adopted, I could not now have brought forward this case. When the patient was convalescent on the first occasion, and before she left the hospital, she was placed under an anæsthetic. I had the advantage of the opinion of Dr. William Smyly as to the advisableness of operative measures for the removal of the tumour. On examining the patient, it was found that, as the uterus had involuted, the tumour had come down with the uterus until it had filled up the hollow of the sacrum. It was evident that as the uterus had increased in size it had drawn up the tumour as far as it possibly could. The tumour was now felt so near the examining finger that the simplest method seemed to be to attack from the post *cul-de-sac*; this, however, Dr. Smyly dissuaded me from attempting, because there evidently was an adhesion of the uterus to the abdominal wall anteriorly, and, in such a case, should any troublesome hæmorrhage occur, it might not be possible to control it efficiently, unless the uterus could be drawn down. If any operation were to be adopted, he would recommend an abdominal section.

The patient left the hospital with the usual warning—to come and report herself from time to time, and should any pain or untoward symptom arise, and especially should she prove pregnant, to come back AT ONCE. This advice she neglected *in toto*, and nothing more was heard of her at the hospital until the 2nd of September, 1900. She then stated that labour had commenced on the 30th of August at 12 noon. She had not sent for any assistance until labour had gone on for a long time. When she was seen by Dr. Sarah Davidson (who was clinical clerk at the time) she was immediately brought into hospital. On examination, the membranes were found ruptured, and the patient seemed in the second stage, but the tumour acted as a wedge and prevented the descent of the head. The general condition of the patient was not bad, and the fœtal heart was 128. According to the patient's statement the first and second stages combined had lasted 73 hours and 35 minutes. The posterior wall of the uterus was drawn up as high as it could possibly go; nevertheless the tumour did not seem to afford as great an obstacle as it did on the first occasion, so that I determined to try the forceps, the head being in the left occipito anterior position. When the patient was prepared the forceps were applied, the patient being under an anæsthetic. With some considerable traction the child was delivered, but in order to try and save it the perinæum was disregarded, with the result that it was somewhat lacerated. A female child, weighing 8½lbs., was safely delivered. Dr. Hughes (Assistant Master) afterwards removed the placenta, which was on the anterior wall of the uterus, and very adherent; in fact, the removal was extremely difficult, but was successful. Two stitches were afterwards put in the perinæum. Her convalescence was uneventful, temperature only once reaching

98·6°, and pulse never above 80. She left hospital on the morning of the tenth day under the promise of returning to see me, but she never has reappeared since. When she went away the fundus was on a level with the pubes, and she was nursing her child. I regret that I cannot give any details as to her present condition, but I hope some time in the future, through the courtesy of Dr. Stevens, the present Master of the hospital, that I may have another opportunity of examining the pelvis. The adhesion of the uterus to the abdominal wall must have stretched so as to allow the uterus to accommodate an 8½lb. child. May it not even now be a source of danger to loops of intestine? One question of interest involved is whether the condition of the tumour at the time of the second labour was owing to the fact that it might have involuted along with the uterus after the first confinement, and failed to enlarge again at the subsequent pregnancy. Had this woman's uterus been removed by Porro's operation or by panhysterectomy, or had her ovaries been removed, she could never have participated in the blessings of maternity. No greater testimony to the care used in suturing the uterus after the Cæsarean section could possibly be adduced than the fact that the uterus—the patient was over 73 hours in the first and second stages—stood the strain of labour for so long without any detriment.

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## INDIAN MEDICAL SERVICE.

The Military Secretary, India Office, has forwarded for publication the following list of candidates for His Majesty's Indian Medical Service who were successful at the Competitive Examination held in London on August 9, 1901, and subsequent days:—

| | | Marks. | | | Marks. |
|---|---|---|---|---|---|
| 1 | Lister, A. E. J. | 3,246 | 12 | Bradley, R. J. | 2,633 |
| 2 | Williams, T. F. B. | 3,135 | 13 | Loch, E. A. | 2,593 |
| 3 | Abbott, S. H. L. | 3,077 | 14 | Carter, R. M. | 2,550 |
| 4 | Greig, A. W. | 3,015 | 15 | Hagger, R. L. | 2,545 |
| 5 | Lloyd, R. E. | 3,013 | 16 | Baker, D. G. R. S. | 2,500 |
| 6 | Woods, J. | 2,965 | 17 | Harley, T. W. | 2,472 |
| 7 | Steen, H. B. | 2,940 | 18 | M'Coy, J. W. | 2,306 |
| 8 | Munro, D. | 2,929 | 19 | Willcocks, R. A. | 2,264 |
| 9 | Bisset, E. | 2,910 | 20 | Paterson, T. G. F. | 2,220 |
| 10 | Clements, J. E. | 2,890 | 21 | Rai, D. G. | 2,207 |
| 11 | Overbeck, Wright A. W. | 2,665 | | | |

# PART II.

## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

*Les Processus Généraux.* I. Histoire Naturelle de la Maladie; Hérédité; Atrophies; Dégénérescences; Concrétions; Gangrènes. Par MM. A. CHANTEMESSE and W. W. PODWYSSOTSKY. Avec 162 figures en noir et in couleurs. Paris: C. Naud. 1901. Pp. 428.

THIS is the first instalment of a work on General and Experimental Pathology of great comprehensiveness and of a very high order of merit. The subjects treated of in this volume are given above, while the second volume, which is to appear in 1902, will deal with Hypertrophies, Tumours, Regenerations, the Pathology of the Circulation, Blood and Lymph, Inflammation, and Fevers.

The work begins with a description of the animal cell and its multiplication, together with what we know of its chemistry and physiology.

After a short discussion as to the meaning of such terms as Affection, Disease (*Maladie*), Diathesis, &c., the scope of the work is defined. "The study of the natural history of a disease is made up of various investigations on the cause of the disease (etiology), the histological and chemical changes in the diseased parts, and the local and general symptoms which result from these (clinique). The knowledge of the causes, processes, symptoms, and laws which govern the morbid phenomena is the aim and object of general pathology."

The different modes in which a morbid process extends, either by direct continuity, by the blood and lymph, or by the nervous system, the different duration of diseases, their various stages and modes of termination, and the phenomena of death of the organism as a whole and of its different parts, form the remainder of the first chapter.

The second chapter deals with the general ætiology of disease. It is largely taken up with a discussion on heredity. The views of Weissmann and all the other well-known writers on physiological heredity receive full notice, and from a study of the clinical and experimental facts bearing on pathological heredity the following conclusions are drawn:—1. Acquired pathological conditions (except infectious diseases) are not transmitted. 2. The only conditions which can be transmitted are either those which have been inherited by the transmitter, or which have affected him at a very early period of embryonic life, prior to the differentiation of the germs of the sexual glands. 3. Diseases acquired by the parents can cause disturbances in the nutrition of the sexual glands and uterus, and thus affect the development of the ovum or spermatozoon. There may from this result in the descendants the most varied forms of dystrophy, general feebleness, irregular development, and symptoms of degeneration. Such dystrophies produce an hereditary predisposition to various affections. 4. The influence of the mother in the hereditary transmission of diseases is much greater than that of the father, whose influence affects only conceptual heredity.

The transmission of nervous diseases, of hæmophilia, of tumours, of syphilis, of tuberculosis, and the heredity of immunity, all receive the fullest consideration, and this discussion brings to an end a brilliantly written and thoughtful chapter.

In speaking of the heredity of neoplasms the authors appear to anticipate that the day will soon come when the microbic nature of cancer will be demonstrated, and then the heredity of cancer will become, as it is for the most part in the case of tubercle, the heredity of the predisposition to permit the growth of the parasite.

In the following chapter, on Simple Atrophy, the question of trophic nerves comes up for discussion, and it is concluded that the existence of atrophies due to alterations of trophic nerves must be admitted on the evidence of clinical and of experimental work, although anatomically the existence of purely trophic nerves is still doubtful. Examples are given of the trophic influence of one part of the nervous system on another, of nerves on muscles, on the sexual glands, and on the skin. As a good example of the trophoneuroses of the skin, pemphigus foliaceus is adduced.

The qualitative atrophies, or degenerations, are thus classified:—

1. Albuminoid Degeneration.
    - Degeneration, with coagulation of protoplasm—
        - Cloudy swelling (parenchymatous, waxy degeneration).
        - Hyaline degeneration.
        - Amyloid degeneration.
        - Horny degeneration.
    - Degeneration, with liquefaction of the protoplasm—
        - Watery degeneration—vesicular—colloid.
        - Mucoid degeneration.
2. Hydrocarbonaceous degeneration.
3. Fatty degeneration.
4. Pigmentary degeneration.

All these forms of degeneration are very fully described and the appearances seen by the microscope illustrated by beautifully-executed coloured drawings. The rather indefinite form of degeneration known as hyaline is defined as a vital transformation of protoplasm into a more or less homogeneous mass, similar to the ground substance of hyaline cartilage. It is due probably to a process of coagulation which fuses all the elements into a single homogeneous mass. It affects chiefly the blood-vessels and connective tissues. Van Gieson's stain is stated to be a true reagent for hyaline degeneration, the degenerated parts taking up the acid fuchsin with avidity. Many beautiful drawings are given of specimens where this condition occurred naturally, or where it was experimentally induced in guinea-pigs by chronic poisoning with typhoid toxin.

The cause of amyloid degeneration is believed to be the toxic action of microbes or of their toxins on the vascular walls. It is, therefore, a result of some chronic infective process—as tuberculosis, syphilis, actinomycosis, prolonged suppuration. As to the nature of the amyloid substance the authors accept the conclusion of Schmiedeberg and Kravkoff, that it is a compound of albumin and of chondroitin sulphuric acid.

When horny degeneration is under discussion the authors take occasion to point out the errors which have been made in mistaking cells in this condition for parasites. That similar errors have been made in the case of vacuolated cells and those undergoing pigmentary degeneration is noticed in other chapters.

An admirable account is given of the laminated amyloid bodies met with in the prostate, nerve centres, and other parts.

In discussing mucous degeneration the whole subject of myxœdema and of the functions of the thyroid gland is considered. Similarly under hydrocarbonaceous degeneration diabetes is discussed, and under fatty degeneration, the metabolism of fat in the body and obesity receive full consideration. Here an account will be found of M. Hanriot's researches on the fat decomposing ferment of the blood serum. This *lipase*, it is believed, is the agent by which the stores of fat in the body are made soluble and available for the wants of the system. The amount of this ferment present may be readily estimated by bringing a certain quantity of serum into contact with a neutral fat (best mono-butyrin), and, after keeping the mixture in a warm place for 20 minutes, determining the quantity of acid set free. The lipase of the serum differs in disease. In some it is normal, in others in excess, as in diabetes. When it falls much below normal the prognosis is bad. In connection with the pathology of fatty metabolism an account is given of a disease recently described under the name of symmetrical adeno-lipomatosis. It is characterised by an accumulation of fat in and around the lymphatic glands, chiefly those of the neck. It occurs always after twenty years of age, and affects men almost exclusively. It has been seen to occur with alcoholism, albuminuria, syphilis, and cancer. It is accompanied by little or no constitutional disturbance. The true nature is still very doubtful. Three good drawings are given of patients affected with this condition.

In the chapter on Pigmentary Degeneration the physiology of the suprarenal capsules, and the effects produced by injection of suprarenal extract, are dealt with, also the formation of pigment in poisoning by the malarial parasites.

In the chapter on Incrustations, Depositions, and Concretions, a very full account is given of calcification, and of deposition of uric acid, and the general pathology of gout receives notice. The opinion is maintained that the deposition of uric acid in gout is due more to a local alteration in the part which favours the separation of the uric acid from the blood than to an excess of uric acid in the blood.

A very interesting section deals with the formation of nasal, biliary, and intestinal calculi—broncholiths, rhinoliths, &c. The deposition of substances artificially introduced into the body, or exogenous deposits, include such deposits as those of siderosis, anthracosis, and other kinds of pneumonoconiosis, as well as argyria, or the deposition of silver when salts of this metal have been given internally or locally applied for a lengthened period.

The final chapter deals with the different forms of gangrene, their ætiology and evolution.

A distinguishing feature of this work is the very complete bibliographical list which it gives at the end of each chapter. There is a good index. The paper, type, and illustrations leave nothing to desire. When the second volume in published this book will form a very valuable contribution to current medical literature, and one which we cannot too highly recommend to the attention of our readers.

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*Epilepsy and other Chronic Convulsive Diseases; their Causes, Symptoms, and Treatment.* By SIR WILLIAM R. GOWERS, M.D., F.R.C.P., F.R.S. Second Edition. London: Churchill. 1901. Pp. 320.

THIS remarkable work gives the results which the author has arrived at from the study of cases under his own care, chiefly at the National Hospital for Paralysed and Epileptic. "Whatever value is possessed by the inferences here presented is due to their being drawn from an extensive series of facts in an original investigation." In the present edition this original character is maintained and widened. "The statistical basis, from which the more general facts of the disease have been ascertained, is increased from 1,450 to 3,000 cases, and the number of cases from which other features have been ascertained is augmented in similar proportion." Such a work, it can readily be seen, is one of extraordinary laboriousness, but its value and importance are fully commensurate with the labour expended on its preparation.

After a short introduction, in which are indicated the general characters and nature of epileptic and other convulsive seizures, the first chapter deals with Ætiology. The greatest stress is laid on the importance of the predisposition to the abnormal nervous discharge and to the increase of this predisposition produced by each attack. There is often no ascertainable exciting cause, but the attack is due to the gradually increasing predisposition. "The malady is thus self-perpetuating," and "the search for the cause must be chiefly an investigation of the conditions which precede the occurrence of the first fit." It appears that females suffer rather more frequently than males, in the proportion of 13 to 12. The importance of heredity has been universally recognised, the nervous disease in the ancestors having been generally epilepsy or insanity. When there is an inherited taint the females are more likely to suffer than the males. Of 973 ascertained cases 53 per cent. were females, 47 males. Inheritance from the mother is more common than from the father, and the tendency is to transmission from father to son and from mother to daughter. The remarkable fact is noticed that sometimes several brothers and sisters in whom no hereditary taint existed became epileptic. A causal relation to epilepsy of tuberculosis, gout, syphilis, or of inherited diathesis outside the nervous system, is as yet unproven. The same may be said of consanguinity of parents, except where neurotic heredity exists in both parents. A case is recorded where two first cousins without nervous taint married. Of seven children, four were born blind from congenital defect of the optic nerve, of the others one, and one of the blind girls became epileptic. This case is cited to show "that apart from a morbid family taint, the marriage of relations may have a profound influence on the offspring." We would respectfully inquire whether this statement is not an instance of "the universal habit of noting rare coincidences and ignoring the vast number of cases in which there is none," a habit reprobated by the author in the preceding paragraph, when speaking of the influence of maternal impressions. Everyone must know many instances in which the offspring of the marriage of cousins were neither blind nor epileptic, but as healthy, mind and body, as their neighbours.

By a study of the influence of age on the occurrence of epilepsy many curious and interesting facts are disclosed. It would appear that there are two periods of life at which the disease is most prone to commence: one in early infancy, 13½ per cent. of the cases began under three years of age. The number is greatest in the first year, and declines until five years, when the minimum for early life occurs. There is a rise at seven, the period of the second dentition; a fall at eight, and then a rise, at first slow, and subsequently more rapid, until at fifteen and sixteen, when about one-seventh of the total cases occurred. From this the numbers decline rapidly to twenty-one, after which only a small number begin in each year. "At each of the maximum periods, at infancy and at puberty, the excess of females is very great. During the later period of childhood the numbers are nearly equal (for boys and girls). The excess of females lessens after puberty and ceases by middle life." It is shown that the influence of heredity is, relatively to the number of cases, only a little less during adult than during early life. Of the infantile exciting causes rickets is shown to be one of the most frequent and important. The large number, 39 cases, which occurred after scarlatina is remarkable.

In the second chapter, on Symptoms, a masterly description of the major and minor attacks is first given, and then the various symptoms are studied in detail, one by one. The account of the warning, or aura, is full of interest. The sensory aura was supposed to be due to something beginning in the part in which the sensation is felt, and gradually travelling up the nerves to the brain. This view was confirmed by the observation that a ligature around the limb would in many cases prevent the occurrence of the fit. But in 1811 it was shown that epileptic attacks due to a tumour in the brain might be prevented by a ligature of the limb, and now "it is recognised that the local aura is, in the vast majority of cases, merely the result of the commencing process in the brain, either affecting the consciousness directly, and causing a sensation which is referred to the part, or producing local spasm, and thus affecting the consciousness indirectly." It is pointed out that 300 years ago Erastus recognised that the aura is really the commencement of the fit. The different forms of auræ are classified under seven heads, and to each group a section is devoted. From these studies many most interesting conclusions are drawn, not only of a statistical kind, but bearing on the actual processes taking place in the brain, on their mutual relations, and on the order of their occurrence.

The detailed account of the actual convulsions is also given with the author's well-known vividness of description and accuracy of observation. We cannot, of course, follow him through this, but we may note a few points of interest. In describing the position of the upper limb during the tonic spasm he points out that while the degree of flexion of the different joints increases from the shoulder to the wrist the fingers are not usually in the position of simple flexion, but of interosseal flexion—that is, flexed at the metacarpophalangeal joints, the other joints extended, the thumb pressed against the first finger or beneath it. A similar posture is seen in athetosis and in paralysis agitans, a fact which indicates "that the same nervous processes in the cortex which are in over-action or unbalanced action in those diseases determine the form of the spasm in many cases of convulsion."

The rarity of death in a fit is well known, but sometimes the tonic spasms, by the asphyxia due to the stoppage of respiration, may depress the respiratory centre so as to make it unable to resume activity. Hence, in cases of this kind artificial respiration should be adopted when the tonic spasm has relaxed.

Among the numerous ways in which a fit may be excited tension or vibration of the muscles is remarkable, while stimuli applied to the skin is often effective in arresting an attack. Thus, in a patient whose fits began in the foot, the sensations with which the fits commenced could be produced by tapping the patellar tendon, and arrested by pinching the skin of the leg. The arrest by ligature or other centripetal impressions is supposed to be due to an action exerted on the central cortex, by which the resistance to spread of the discharge is increased.

The condition after attack receives very full consideration. The deep, comatose sleep which so commonly follows a fit may be so intensified by the administration of even a small dose of morphin as to be fatal. The paralysis which was so well described by Dr. Todd is probably not due, as supposed by him, to exhaustion of the centres owing to the previous excessive discharge, for the degree of the paralysis is not in proportion to the preceding convulsion, and may even be marked in cases where spasm was altogether prevented by the ligature. It is, therefore, probably due rather to inhibition than to exhaustion of the motor centres.

The great importance of the tendency manifested by patients suffering from either the major or minor attacks to turn over on their faces in a fit, and thus, if in bed, to asphyxiate themselves in the pillows, is strongly insisted on. The tendency is explained by supposing "an obtrusive initial vertigo and deviation of the head."

The mental failure which is so often manifested by epileptics "is determined less by single conditions than by their combinations, and it is probable that a more potent cause than the attacks themselves consists in a predisposition to suffer under their influence, a predisposition which is related to the ultimate causes of the disease rather than to its developed characters."

After a chapter on organic epilepsy, or that due to organic disease in the brain, the subject of hysteroid convulsions and hystero-epilepsy is considered. The character of the convulsions in these attacks is their purposive character; "the spasmodic movements are of a more or less co-ordinated character, such as may be produced by the will." Numerous cases are recorded, and the complicated symptoms are fully discussed. The differences observed in attacks of this kind in English and French subjects is pointed out, and anyone who has witnessed the disgusting character of the Parisian disease will feel happy in thinking that many of the most offensive symptoms are greatly toned down in English patients. The compression of the ovaries, which in France so readily excites or arrests an attack, often is without effect in this country, while asphyxiation by closure of mouth and nose, affusion of cold water, the application of the Faradic brush, or, if all else fail, nausea and vomiting, induced by a hypodermic injection of pilocarpin, are effective in arresting an attack. It is of the greatest importance to remember that hysterical attacks may occur as a sequel to true epileptic fits, and that the former, being so much more demonstrative than the latter, may cause the epileptic element to be overlooked, and may thus lead to serious consequences, as when a patient who has had hysterical attacks may turn on her face in bed and be asphyxiated, or may fall into a condition of status epilepticus, and so die.

We must pass over the chapters on hysteria in males; the attacks intermediate between hysteria and epilepsy; the morbid conditions associated with epilepsy; the course of the disease; and the pathology, although there is not a page of these chapters that does not deserve careful perusal. The chapter on diagnosis is very full, and deals magisterially with the distinctions which should be drawn between the different kinds of attack, the diagnostic points in epilepsy and hysteria being reduced to tabular form. An interesting example of the difficulty of diagnosis between real and feigned epilepsy is given in a note. The author and the late Sir Russell Reynolds were walking together when a beggar fell down before them in an apparent epileptic fit, and these two men, probably the greatest authorities in the British isles, were unable to say whether the fit was genuine or feigned.

After a careful consideration of everything bearing on prognosis, it is concluded that it really turns on the effect of bromide treatment. "A really good prognosis can seldom be given unless all the attacks are averted by bromide in moderate doses, such as fifty or sixty grains a day," and unless this treatment is persisted in for two or three years.

The treatment is, thus, bromide—best potassium bromide. All other medicines are subordinate to this, although borax, zinc, and a few other drugs are sometimes useful, and belladonna and digitalis may sometimes increase the effect of bromide when given with it. Nitro-glycerine was found to be without effect, while opium may be distinctly dangerous, as already noticed. The acne eruption sometimes produced by bromide may be entirely prevented by the addition of arsenic to the bromide. No advantage of other bromides over bromide of potassium was noticed, and the greater favour which this salt enjoys is shown by the enormously larger amount of it than of any other bromide prescribed. Thus, in 1899, at the National Hospital for Paralysed and Epileptic, 3,664 lbs. of potassium bromide were used, 313 lbs. of sodium bromide, 114 lbs. of ammonium bromide, 6 lbs. of strontium bromide, and only 3 lbs. of lithium bromide.

There is no author who has done more by his writings to diffuse among the profession of this country a sound and exact knowledge of nervous disease than Sir William Gowers. To this classical work we can give no higher praise than to say that it is well worthy of its author.

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*A Retrospect of Surgery during the Past Century.* Being the Hunterian Oration of the Hunterian Society, 1901. By JOHN POLAND, F.R.C.S.; Surgeon to the City Orthopædic Hospital; Senior Surgeon to the Miller Hospital; Author of "Traumatic Separation of the Epiphyses;" Author of "Skiagraphic Atlas of the Hand and Wrist," &c., &c.; Editor of "Bodily Definitions," by E. T. Chance. London: Smith, Elder & Co. 1901. Pp. 97.

THOSE acquainted with the books of Mr. Poland, and especially his "Traumatic Separation of the Epiphyses," will not be surprised at his being elected the Hunterian Orator of the Hunterian Society for 1901, nor will they be disappointed in reading his oration. The subject chosen was a fitting one at the beginning of a new century. It was a great effort.

well worthy of the occasion, and one on the success of which we heartily congratulate the orator.

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*A Manual of Hygiene and Sanitation.* By SENECA EGBERT, A.M., M.D.; Professor of Hygiene and Dean of the Medico-Chirurgical College of Philadelphia; Member of the Academy of Natural Sciences of Philadelphia; Member of the American Medical Association, &c., &c. Second Edition, enlarged and thoroughly revised. Illustrated with 77 Engravings. London: Henry Kimpton. 1901. Pp. 435.

THE author of this work states in his preface that the details given are based on American practice; consequently, we find much space devoted to the description of methods of house-warming which are not much used in England. In the chapter on the Removal and Disposal of Sewage we note that the author approves of placing the soil-pipe entirely within the house, owing to the danger of freezing of its contents. Such a proceeding is looked on with horror by most British sanitarians of the present day. Some of the statements made in the same chapter seem to require verification—for instance, we read that four-fifths of the people in Manchester, England, "are obliged to have earth-closets." There are, in fact, practically no earth-closets in Manchester at present, though privy middens and pail-closets still exist in large numbers in that city.

In the chapter on Water there are some interesting details given relative to the death-rates from enteric fever in American cities in relation to the purity of their water supply.

We read with pleasure excellent chapters on School Hygiene—a subject which has hardly received the attention which it should from the authors of the smaller English text-books; and on Military Hygiene, in which some of the conclusions regarding enteric fever drawn from the experiences of the U. S. Army, and epitomised by Dr. V. C. Vaughan, have been terribly verified by the recent experiences of the British Army in South Africa.

The author's remarks on Stimulants and Beverages strike us as being marked by temperance and common sense.

We can safely recommend the book to students and sanitarians as a supplement to, rather than as a substitute for, the excellent works on these subjects published in England, which seem to us more suited to the climatic and social conditions prevalent in this country.

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*A Practical Treatise on Diseases of the Skin for the use of Students and Practitioners.* By JAMES NEVINS HYDE, A.M., M.D., and FRANK HUGH MONTGOMERY, M.D. Sixth and Revised Edition. Illustrated with 107 Engravings and 27 Plates in colours and monochrome. London: Henry Kimpton. 1901. 8vo. Pp. 828.

"GOOD wine needs no bush," says the proverb, and this work is "good wine." Written jointly by the Professor and the Associate Professor of Skin, Genito-urinary, and Venereal Diseases in Rush Medical College, Chicago, it may well be entitled a Practical Treatise on Diseases of the Skin. That it has not missed its mark is evidenced by the fact that the work has already passed through five editions. The rapid exhaustion of the fifth edition has necessitated a revision at a date earlier than was anticipated. While this revision has extended to the entire work, the following subjects have been wholly or in part re-written for the sixth edition:—Anatomy, General Diagnosis, Herpes Simplex, Herpes Zoster, Acne, Psoriasis, Scleroderma, Tuberculosis, Blastomycosis, and Carates—this last being an epiphytic disease, characterised by peculiar pigmented patches on the skin and prevalent in certain districts in tropical America. It is also called "Pinta" or "Mal de los Pintos," and its effective parasite is of the aspergillus family, fine filaments giving rise to hyphæ which terminate in clubs surrounding chaplets of spores.

Three new plates and some new engravings have been added, so that the volume is now illustrated by no fewer than 107 engravings and 27 plates in colours and monochrome.

The popularity of the work may be gauged by its history as briefly detailed in an introductory "Publisher's Note." The first edition appeared in 1883, the second in 1888, the third in 1893, the fourth in 1897, the fifth towards the close of 1899, and the sixth early in 1901.

For many years we have used Hyde's and Montgomery's "Diseases of the Skin" as a work of reference, and we can very cordially recommend it as a standard authority on practical and scientific dermatology.

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*The Illustrated Medical Dictionary.* By W. A. NEWMAN DORLAND, A.M., M.D., Assistant Obstetrician to the University of Pennsylvania Hospital; Editor of the American Pocket Medical Dictionary; Fellow of American Academy of Medicine. Second Edition, revised. London and Philadelphia: W. B. Saunders and Co. 1901. 8vo. Pp. 770.

THE title-page describes this work as "a new and complete dictionary of the terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, and the kindred branches, with their pronunciation, derivation, and definition, including much collateral information of an encyclopedic character, together with new and elaborate tables of arteries, muscles, nerves, veins, &c.; of bacilli, bacteria, diplococci, micrococci, streptococci, ptomains and leukomains, weights and measures; eponymic tables of diseases, operations, signs and symptoms, stains, tests, methods of treatment, &c." We have looked carefully through the pages of the work, and we consider the above to be a fair synopsis of its contents. There are a few points which are fairly open to criticism. First, in a work intended for British as well as for American readers (for it is published in London as well as at Philadelphia) the exclusive adoption of American spelling is in questionable taste. Thus we have "anemia," "color," "chlorid," "iodid," "bromid," "feces," "fetal," "fetus," "fetor," and a host of such like spellings. Again, but little attention seems to have been paid to the British Pharmacopœia in compiling lists of drugs. For example, under the heading "Acetum," we have A. aromaticum, cantharidis, lobeliæ, opii, sanguinariæ, scillæ; but the B. P. preparation, Acetum ipecacuanhæ, is omitted. In a table of the Exanthemata on page 246, the incubation of measles is given as "three to five days," that of scarlatina as "one to twenty-one days," that of vaccinia as "two days." In this last case, Dr. Dorland presumably means the period which elapses between vaccination and the local manifestation of infection. The true duration of incubation in vaccinia is undoubtedly eight days—it is on the eighth day after vaccination that constitutional symptoms appear. Lastly, the Greek derivations require revision in several instances. For example, *ζωστήρ* is printed *ξωστήρ*, *ζώνη* appears as *ζόνη*, *ζῆλος* as *ζῦλος*, and so on. Pythogenetic is derived from *πύθειν*, to rot, and *λεννâο*, to produce—the latter word should, of course, be *γεννάω*.

But, after all, the inaccuracies are wonderfully few among the vast number of words included in the dictionary, and the work compares very favourably in this regard with others of its class.

The illustrations are for the most part excellent of their kind, and present quite a novel feature in a work of this nature. The author candidly admits that they have been chosen for their practical value in aiding the text rather than for their pictorial beauty, the intention being to show to the eye what could be only imperfectly described in words.

The volume is of convenient size and attractive appearance. It is beautifully printed, and reflects equal credit on the author and the enterprising firm to which it owes its publication.

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*Eye, Ear, Nose, and Throat.* A Manual for Students and Practitioners. By WILLIAM LINCOLN BALLINGER, M.D., and A. G. WIPPERN, M.D. Illustrated with 150 Engravings, and 6 Coloured Plates. London: Henry Kimpton. 1901. 8vo. Pp. 511.

THAT of recent years in America the production of portmanteau books has become very common is beyond question; that they are an advantage is, in our opinion, far from being proved. Certainly, the work before us, if it is to be regarded as typical of the class, goes far to condemn the practice of combining "for convenience" several independent books under one cover.

Here it is the "eye, ear, nose, and throat" that are combined by two entirely separate authors, under one cover. The result is a book awkwardly large and heavy for holding in one hand, and awkwardly small to allow space for each subject to be treated with sufficient fullness to make it quite intelligible even to those already fairly well acquainted with the subject. It is certainly no sufficient help to those for whom it seems to have been specially designed.

Too much has been attempted, and too much has been left undone, or so imperfectly done as to render it practically useless. As far as it goes, the information conveyed is correct, but it is hard to enjoy eating a dinner of pills, even if these pills consist of the best made extract of beef and dried peas. Brevity has too often taken the place of lucidity, and we fear the student will readily suffer from mental indigestion, while his appetite for surgical knowledge, whether it be ophthalmic, aural, nasal, or laryngological, remains still unsatisfied.

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*Manual of Diseases of the Ear, including those of the Nose and Throat in relation to the Ear.* For the use of Students and Practitioners of Medicine. By THOMAS BARR, M.D. Third Edition. Revised and partially rewritten, with 236 Illustrations. Glasgow: James Maclehose & Son. 1901. Large 8vo. Pp. 429.

THE work is dedicated to the Right Honorable Lord Lister as a token of admiration and gratitude. The author, in his preface, states that the aim of the work is to present the main facts of otology in such a form as to meet the wants of medical students and practitioners.

The most important changes in the present edition will be found in the chapters dealing with the consequences of purulent diseases of the middle ear, and their operative treatment, for there is no doubt that a clearer knowledge of the indications for surgical interference, as well as improved methods of operation and after-treatment, have arisen during the past few years. The operations of Schwartze, Stacke, Küster, and others on the cavities of the middle ear have undergone various useful modifications: the most important, perhaps, being the grafting operation recently introduced by Mr. C. A. Ballance. All these subjects have been revised and brought up to date, and the volume before us now forms one of the very best and most reliable guides to the present state of otological knowledge. As we have already reviewed the earlier editions, it is not necessary further to go into details about the present one; suffice it to say that all that we said in praise of the previous editions we endorse concerning this one.

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*A Manual of Surgical Treatment.* By W. WATSON CHEYNE, C.B., M.B., F.R.C.S., F.R.S.; Professor of Surgery in King's College, London; Surgeon to King's College Hospital and the Children's Hospital, Paddington-green, &c.; and F. F. BURCHARD, M.D. & M.S. (Lond.), F.R.C.S.; Teacher of Practical Surgery in King's College, London; Surgeon to King's College Hospital and the Children's Hospital, Paddington-green, &c. In six parts. London: Longmans, Green & Co. 1901. Part 5, pp. 470.

THE volume before us consists of two divisions; the first is by the authors, Messrs. Cheyne and Burchard, and is devoted to the surgical affections of the head, face, jaws. lips, larynx and trachea, while the second treats of the intrinsic diseases of the nose, ear and larynx, a section for which H. Lambert Lack, M.D. (Lond.), F.R.C.S., Surgeon to the Hospital for Diseases of the Throat, Golden-square, and to the Throat and Ear Department of the Children's Hospital, Paddington-green, is responsible.

This is a welcome addition to the 4 parts of this work already reviewed, and well maintains the high standard of excellence the study of each of its predecessors has led us to expect, while it is considerably larger. Detailed criticism is unnecessary, suffice it to say that to each section full justice is done, and the reader will find much valuable practical information; while to the general surgeon in country places, whose duty it often is to treat some of the intrinsic diseases of the ear, nose, and larynx, the division written by Mr. Lack will be most welcome.

There are a couple of points to which, however, we should direct attention. On page 43 the site for trephining for the anterior branch of the middle meningeal artery is correctly given as a point 1½ inches behind the external angular process of the frontal bone and about the same distance above the zygomatic process, while on page 45 the site for exposing this same branch of the artery is given as a point 1½ inches behind and about the same distance above the external angular process of the frontal bone. This is evidently a slip, as it would make a difference of ½ an inch or more from the former site. On page 45, four lines from the top, the following sentence appears :—" Other symptoms are paralysis, which varies with the position of the clot, and is due to pressure on the motor areas of the cortex.'' The sentence should read "Another symptom is paralysis," &c., or " Other symptoms are paralyses, which vary with the position of the clot, and are due to pressure on the motor areas affected." If more care were exercised in reading the proof sheets, grammatical mistakes of this nature would not appear.

The illustrations are numerous and well produced. Both authors and publishers are again to be congratulated.

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*Cliniques Médicales Iconographiques.* Par MM. P. HAVSHALTER, G. ETIENNE, L. SPILLMANN, et CH. THIRY. Fascicule I. Planches 1 à 7. Paris: C. Naud. 1901. 4to. Pp. 48.

THIS is the first part of what promises to be a very splendid and useful work. When completed it is to consist of 62 plates, containing 398 figures, drawn from 284 cases. It is to be published in monthly parts, and to be completed next December. If we may judge from the part before us the work will leave little to desire, either in the beauty and fidelity of the figures or in the conciseness and clearness of the explanatory text. Pictorial works of this class are of the highest value. Theories of disease change from year to year, but a good drawing or photograph is always the same and always true.

The first three parts are to deal with nervous and muscular diseases. The fourth will illustrate general diseases, such as acromegaly, Graves's disease, myxœdema, dwarfs. The next two are occupied by various cutaneous affections; the seventh with syphilis, and the last with aneurysms, rickets, osteomalacia, arthritis deformans, and anomalies of development of the hands and feet.

It will thus be seen that while all morbid conditions are not figured, the work will be, as the prospectus states, a fairly respectable one.

In the seven plates of the number before us there are 53 figures illustrating the different forms of muscular atrophy. The first two plates show the appearances of patients affected by the Duchenne Aran, or myelopathic, atrophy—characterised by its commencement in adult life, generally in the hand of one side, then affecting the other muscles of the arm, and passing first to the opposite upper extremity, then to the other muscles of the body. Its course is chronic. Tremblings are noticed in the atrophying muscles, and at a certain stage the reaction of degeneration. The atrophy of the muscles is not concealed by any overgrowth of fatty or connective tissue. There is usually no history of heredity. The disease is primarily a poliomyelitis affecting the cells of the anterior horn. When the nuclei in the bulb are affected we have labio-glosso-laryngeal paralysis. When the nuclei of the eye muscles are engaged we have progressive nuclear ophthalmoplegia.

The remaining five plates contain figures photographed from cases of progressive muscular atrophy of myopathic origin, where the spinal cord is free from disease. This condition, of which there are several varieties, generally affects several members of the same family, begins in early youth or adolescence. The atrophy is symmetrical. The muscles do not present trembling or the reaction of degeneration. The disease is progressive but slow in its evolution. It begins commonly in the muscles of the scapular or pelvic girdle, in the face or in the limbs. In the latter case the muscles near the trunk are affected before those which are more distal. The atrophy can be better judged of by the feebleness of the muscle than by its bulk, as the loss of muscular substance is frequently masked by growth of connective tissue The atrophy gives rise to peculiar and characteristic alterations in the shape of the body, in the attitudes assumed, and in the mode of progression.

In Plates 3, 4, and 5, figures are given of cases of the facio-scapulo-humeral type of atrophy, or that which goes by the name of type Landouzy-Déjérine. On Plate 6 are illustrations of the juvenile type of Erb, and on Plate 7 are represented cases of the Leyden-Mœbius type and of the Hoffmann type.

In the admirably succinct and graphic description of the cases the authors often speak doubtfully of the class in which each should be placed. They admit that there are intermediate forms, and that even the two main divisions—namely, the myelopathic and the myopathic—are not so sharply marked off from one another as some would have us believe.

As to the plates we cannot speak too highly of the judgment with which the subjects have been chosen and posed, and of the artistic skill shown in the execution of the figures. The entire work is highly creditable to the Nancy school, from which it originates, and is, we feel sure, likely to enjoy that popularity to which its great merits entitle it.

We may add that the price of the complete work is 50 francs.

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## SPORADIC CRETINISM.

**Packard and Hand** (*American Journal of the Medical Sciences,* September, 1901) report a case of sporadic cretinism in which there was rapid improvement under the use of thyroid extract. The patient was a child aged six years, who died, while yet under their observation, of an intercurrent attack of typhoid fever, after having been under their care for two years.

# PART III.

# MEDICAL MISCELLANY.

*Reports, Transactions, and Scientific Intelligence.*

## MEDICAL EDUCATION AND EXAMINATIONS IN IRELAND.

### 1901–1902.

**Medical** students in Ireland, as elsewhere, have in the first instance to choose between University Degrees and Non-University Qualifications or Diplomas. Should they elect to try for an University Degree, their choice must lie between the University of Dublin, which requires a Degree in Arts before registrable Degrees in Medicine, Surgery, and Midwifery are conferred, and the Royal University of Ireland, which—while not requiring a full Arts Degree—yet rightly insists on a liberal education in Arts, tested by more than one searching examination in the same, before a candidate graduates in the three branches of medicine already mentioned—Medicine, Surgery, and Midwifery.

Outside the Universities, the chief Licensing Bodies are the Royal Colleges of Physicians and Surgeons. The Conjoint Examination Scheme between the Royal College of Surgeons in Ireland and the Apothecaries' Hall of Dublin has ceased to exist. The position of the latter body as a Licensing Corporation under the Medical Act of 1886 has been defined by the appointment of Examiners in Surgery by the General Medical Council at the bidding of Her Majesty's Privy Council.

The Royal Colleges of Physicians and Surgeons are in a position to give a first-class working qualification in Medicine, Surgery, and Midwifery—a qualification which is registrable under the Medical Acts, which is universally recognised as one of high merit, and the possession of which is attended by no disabilities, such as preventing its possessor from dispensing medicines or keeping open shop for the sale of medicines, if he is legally qualified to do so.

The Medical Schools in Ireland are—(1.) The School of Physic in Ireland, Trinity College, Dublin; (2.) The Schools of Surgery of the Royal College of Surgeons in Ireland (including the Carmichael College of Medicine and the Ledwich School of Medicine); (3.) The Catholic University Medical School, Cecilia-street, Dublin; (4.) The School of Medicine, Queen's College, Belfast; (5.) The School of Medicine, Queen's College, Cork; and (6.) The School of Medicine, Queen's College, Galway.

Facilities for Clinical Instruction in fully-equipped Medico-Chirurgical Hospitals exist in Dublin, Belfast, Cork, and Galway; but, as a rule, the Schools of Medicine in Ireland are not attached to a given hospital, or *vice versâ*, as is the case in London and other large centres of medical education. The student will, however, have little difficulty in selecting a hospital in the wards of which he will receive excellent bedside teaching, and have ample opportunity of making himself familiar with the aspect and treatment of disease.

The detailed information which follows is authentic, being taken directly from the published calendars of the respective licensing bodies.

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## REGULATIONS PRESCRIBED BY THE GENERAL MEDICAL COUNCIL.

With regard to the course of Study and Examinations which persons desirous of qualifying for the Medical Profession shall go through in order that they may become possessed of the requisite knowledge and skill for the efficient practice of the Profession, the General Medical Council have resolved that the following conditions ought to be enforced without exception on *all* who commence their Medical Studies at any time after Jan. 1, 1892:—

(*a.*) With the exception provided below, the period of Professional Studies, between the date of registration as a medical student and the date of Final Examination for any Diploma which entitles its bearer to be registered under the *Medical Acts*, must be a period of *bonâ fide* study during not less than five years.

(*b.*) In every course of Professional study and Examinations, the following subjects must be contained:—

(I.) Physics, including the Elementary Mechanics of Solids and Fluids, and the rudiments of Heat, Light, and Electricity.
(II.) Chemistry, including the principles of the Science, and the details which bear on the study of Medicine.
(III.) Elementary Biology.
(IV.) Anatomy.
(V.) Physiology.
(VI.) Materia Medica and Pharmacy.
(VII.) Pathology.
(VIII.) Therapeutics.
(IX.) Medicine, including Medical Anatomy and Clinical Medicine.
(X.) Surgery, including Surgical Anatomy and Clinical Surgery.
(XI.) Midwifery, including Diseases peculiar to Women and to New-born Children.
(XII.) Theory and Practice of Vaccination.
(XIII.) Forensic Medicine.
(XIV.) Hygiene.
(XV.) Mental Disease.

The first four of the five years of Medical Study should be passed at a School or Schools of Medicine recognised by any of the Licensing Bodies, provided that the First Year may be passed at a University, or Teaching Institution, recognised by any of the Licensing Bodies, where the subjects of Physics, Chemistry, and Biology are taught.

A student who has, previous to registration, attended a course or courses of study in one or all of the subjects, Physics, Chemistry, or Biology, in any University, School of Medicine, or Teaching Institution recognised by any of the Licensing Bodies, may without further attendance be admitted to examination in these subjects: provided always that such course or courses shall not be held to constitute any part of the five years' course of professional study.

The exception referred to above in (*a*) is as follows:—

Graduates in Arts or Science of any University recognised by the General Medical Council who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an Examination in these subjects for the Degrees in question, are held to have completed the first of the five years of Medical Study.

The Examinations in the Elements of Physics, Chemistry, and Biology should be passed before the beginning of the Second Winter Session.

The General Medical Council recommends the Licensing Bodies to require that the fifth year should be devoted to clinical work at one or more public hospitals or dispensaries, British or foreign, recognised by any of the medical authorities mentioned in

Schedule (A) of the Medical Act (1858), provided that of this year six months may be passed as a pupil to a registered practitioner possessing such opportunities of imparting medical knowledge as shall be satisfactory to the medical authorities.

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## I.

## UNIVERSITY OF DUBLIN.

### DEGREES AND DIPLOMAS IN MEDICINE, SURGERY, AND MIDWIFERY.

The Degrees and Diplomas in Medicine, Surgery, and Midwifery granted by the University are as follow:—

The Degrees are:—

1. Bachelor in Medicine.
2. Bachelor in Surgery.
3. Bachelor in Obstetric Science.
4. Doctor in Medicine.
5. Master in Surgery.
6. Master in Obstetric Science.

The Diplomas are:—

1. Diploma in Public Health (formerly Qualification in State Medicine).
2. Diploma in Medicine.
3. Diploma in Surgery.
4. Diploma in Obstetric Science.

### REGULATIONS FOR STUDENTS WHO MATRICULATED ON OR BEFORE 25TH NOVEMBER, 1891.

As the number of students who matriculated before November, 1891, is now small, it seems unnecessary to print in full the conditions which must be fulfilled in order that such candidates should qualify for the Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.). The Registrar of the School of Physic in Ireland will supply all information on application to him.

### REGULATIONS FOR STUDENTS WHO MATRICULATED SINCE 1891.

The following conditions must be fulfilled in order to qualify for the Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.):—

I. The Student must be of B.A. standing, and his name must be for at least five (Academic) years on the Books of the Medical School, reckoned from the date of his Matriculation. He may carry on his Arts Course concurrently with his Medical Course, and he need not have taken his B.A. before presenting himself for his Final Medical Examination, but he cannot have the Medical Degrees conferred without the Arts Degree.

II. The following Courses must have been attended:—

[NOTE.—The Courses marked thus (*) must have been taken out before the Student can present himself for any part of the Final Examination. In addition, the Courses marked thus (†) must have been taken out before he can present himself for Section B; the Courses marked thus (‡) before he can present himself for Midwifery; and the Courses marked thus (§) before he can present himself for Medicine and Surgery.]

### 1. LECTURES.

#### WINTER COURSES.

*_Systematic Anatomy._
*_Descriptive Anatomy, 1st year._
*_Descriptive Anatomy (with Dissections), 2nd year._
*_Applied Anatomy (with Dissections)._

*_Chemistry._
†_Surgery._
*_Physiology (two Courses)._
†_Practice of Medicine._
‡_Midwifery._
†_Pathology._

#### SUMMER COURSES.

*_Practical Chemistry._
*_Practical Histology._
*_Botany._
*_Zoology._
*_Materia Medica and Therapeutics._

†_Medical Jurisprudence and Hygiene._
§_Operative Surgery._
†_Practical Pathology._

#### TERM COURSES.

*_Physics._—Michaelmas, Hilary, and Trinity Terms.

### §2. HOSPITAL ATTENDANCE.

1. Three Courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other Metropolitan Hospital recognised by the Board of Trinity College.

Students who shall have diligently attended the practice of a recognised London or Edinburgh Hospital for one year, of a recognised County Infirmary, or of a recognised Colonial Hospital, for two years previous to the commencement of their Metropolitan Medical Studies, may be allowed, on special application to the Board of Trinity College, to count the period so spent as equivalent to one year spent in a recognised Metropolitan Hospital.

### §3. PRACTICAL VACCINATION.

One month's instruction in Practical Vaccination to be attended at the Vaccine Department, Local Government Board for Ireland, 45 Upper Sackville-street; at No. 1 East Dispensary, 11 Emerald-street; or, until further notice, at the Grand Canal-street Dispensary.

### §4. MENTAL DISEASE.

A Certificate of attendance on a three months' Course of Practical Study of Mental Disease in a recognised Institution.

### ‡5. PRACTICAL MIDWIFERY.

A Certificate of attendance on a six months' Course of Practical Midwifery with Clinical Lectures, including not less than thirty cases.

### §6. OPHTHALMIC SURGERY.

A Certificate of attendance on a three months' Course of Ophthalmic Surgery.

III. The following Examinations must be passed:—

The Previous Medical or Half M.B. Examination.
The Final Examination.

The Previous Medical Examination must be passed in all its parts before any part of the Final can be entered for, except in the case of Candidates for Diplomas.

### A.—PREVIOUS MEDICAL EXAMINATION.

This Examination is divided into—

1. Physics and Chemistry.
2. Botany and Zoology.
3. Anatomy and Institutes of Medicine (Practical Histology and Physiology).

The Examination in Anatomy includes examination on the dead subject.

Before presenting himself for examination in any of the subjects the Student must have obtained credit for the corresponding Courses of Lectures and Practical Instruction.

### B.—THE FINAL EXAMINATION.

The Final Examination is arranged as follows:—

## FIRST PART.

### SECTION A.

Applied Anatomy (Medical and Surgical), paper.
Applied Physiology, *vivâ voce.*
Materia Medica and Therapeutics, paper and *vivâ voce.*

### SECTION B.

Medical Jurisprudence and Hygiene, paper and *vivâ voce.*
Medicine, paper and *vivâ voce.*
Surgery, paper and *vivâ voce.*
Pathology, paper and *vivâ voce.*

Section A may be passed in any part of the Fourth Year, provided the corresponding Curriculum shall have been completed; Section B not before Trinity Term of the Fourth Year.

Section A must be passed before the Candidate can present himself for Examination in Section B. Both Sections must be passed at least one Term before the Candidate can present himself for the Final Examinations in Surgery, Medicine, or Midwifery.

Fee for the *Liceat ad Examinandum* £5, to be paid when the Candidate enters for Section A.

## SECOND PART.

### MEDICINE.

Clinical Medicine.
Mental Disease.

### SURGERY.

Clinical Surgery.
Operations.
Ophthalmic Surgery.

### MIDWIFERY.

Midwifery, paper and *vivâ voce.*
Gynæcology, paper and *vivâ voce.*
Obstetrical Anatomy, paper.

One Section of the Second Part must be passed in Trinity Term of the Fifth Year, or subsequently. The other two may be passed in any Term of the Fifth Year, provided the corresponding Curriculum shall have been completed. Subject to this provision the Sections may be taken in any order.

Fee for the *Liceat ad Examinandum* £5, to be paid when the Candidate enters for the Section for which he first presents himself.

The Candidate must also produce Certificates of attendance at the Hospitals where the Courses prescribed for each Section are to be taken out.

### UNIVERSITY DIPLOMAS.

Candidates for the Diplomas in Medicine, Surgery, and Obstetric Science must be matriculated in Medicine, and must have completed two years in Arts, and five years in Medical Studies.

The dates, regulations, and subjects of Examination are the same as for the Final Examination, except that it is not necessary to attend the Courses of Lectures in Botany and Zoology, nor to pass the Previous Medical Examination in these subjects.

A Diplomate on completing his Course in Arts, and proceeding to the Degree of B.A. may become a Bachelor, by attending the Lectures on Botany and Zoology, passing the Previous Medical Examination in those subjects, and paying the Degree Fees.

The *Liceat* fees are the same as for the Finals.

Each Candidate who has completed the prescribed Courses of study and passed all the Examinations will be entitled, if a Graduate in Arts, to have conferred on him the Degrees of M.B., B.Ch., B.A.O.. on payment to the Senior Proctor of the Degree Fees amounting to £17. A corresponding regulation applies to the Diplomas, the Fees for which are £11. He will also obtain from the Senior Proctor a Diploma, entitling him to be entered on the Register of Medical Practitioners under the Medical Act, 1886.

## DIPLOMA IN PUBLIC HEALTH OR STATE MEDICINE.

The Diploma in Public Health is conferred, after examination, by the University of Dublin, upon Candidates fulfilling the following conditions:—

1. The Candidate must be a Doctor in Medicine, or Graduate in Medicine and Surgery, of Dublin, Oxford, or Cambridge.

2. The name of the Candidate must have been on the Medical Register at least twelve months before the Examination.

3. The Candidate must have completed, subsequent to Registration, six months in a Laboratory, recognised by the Provost and Senior Fellows, in practical instruction in Chemistry and Bacteriology applied to Public Health, and also have attended, practically, outdoor Sanitary work for six months, under an approved Officer of Health.[*]

The Examination to be passed by the Candidate is prescribed as follows:—

### PART I.

Chemistry, paper and practical.

Experimental Physics and Meteorology, practical.

Bacteriology and Pathology, paper and practical.

Candidates are liable to be examined in the method of conducting *post-mortem* Examinations.

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[*] This condition does not apply to Practitioners registered, or entitled to be registered, on or before January 1st, 1890.

### PART II.

Hygiene and Epidemiology, paper.
Sanitary Engineering, paper.
Public Health Acts and Vital Statistics, paper.
Practical Sanitary Report.

The two Parts may be passed in consecutive weeks or with an interval between, at the option of the Candidate, provided that the requisite curriculum for each Part has been completed before the Candidate presents himself.

Examinations for Part I. will begin on December 9th, 1901, and June 8th, 1902; for Part II. on December 16th, 1901, and June 15th, 1902.

Candidates are required to send in their names to the Registrar of the School of Physic at least a week before the first day of Examination.

Candidates who have registered since January 1st, 1890, are required to apply to the Board of Trinity College for leave to present themselves, a month before the Examination begins, and to submit at the same time Certificates of the required Courses of Study.

There is no fee.

The attention of Students is directed to the importance of obtaining a Diploma in Public Health as soon as possible after they obtain their Medical Degrees. An increasing number of Public Bodies are requiring it as well as the usual Qualifications in Medicine, Surgery, and Midwifery.

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## II.

## ROYAL UNIVERSITY OF IRELAND.

### COURSES FOR DEGREES IN MEDICINE, SURGERY, AND OBSTETRICS.

### *General Regulations.*

The Course for these Degrees shall be of at least five Medical years' duration; but Graduates in Arts or Science who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an Examination in these subjects for the Degrees in question, shall be held to have completed the first of the five years of Medical Study.

Students who commenced their Medical Studies after Jan. 1, 1892, must furnish evidence of having been registered by the Medical Council, as Students in Medicine, for at least 57 months.

before being admitted to the M.B., B.Ch., and B.A.O. Degrees Examination.

No one can be admitted to a Degree in Medicine who is not twenty-one years of age.

All Candidates for these Degrees, in addition to attending the lectures and complying with the other conditions to be from time to time prescribed, must pass the following Examinations:—

The Matriculation Examination.
The First University Examination.
The First Examination in Medicine.
The Second Examination in Medicine.
The Third Examination in Medicine.
The Examination for the M.B., B.Ch., B.A.O. Degrees.

The Course of Medical Studies shall be divided into five Periods of one Medical Year each.

Candidates shall furnish proper Certificates of attendance at the several Courses of Medical Instruction prescribed for the different years of the curriculum.

No such certificate will be received unless it attests a *bonâ fide* attendance at three-fourths of the whole Course. *Students are reminded that certificates of attendance at Night Lectures will not be accepted.*

No Certificates of instruction in any of the Courses of Medical Studies, in connection with either Lectures or Hospitals, can be received, unless issued by an Institution which has been formally recognised by the Senate.

The prescribed courses in Natural Philosophy, Chemistry, Biology, Anatomy and Physiology must be attended in Institutions provided with the appliances required for the performance by the Students of proper Experimental Courses and Practical Work in these subjects.

Where Certificates in a special department (Fever, Mental Diseases, Ophthalmology, &c.) are presented, they must be signed by the Physician or Surgeon in charge of such department.

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## THE EXAMINATION FOR THE M.B., B.CH., B.A.O. DEGREES.

Candidates may present themselves for this Examination after an interval of such period, not being less than one Medical Year from the time of passing the Third Examination in Medicine, as the Senate may from time to time prescribe, provided they shall have completed the entire Medical Curriculum.

Printed forms of application for admission to this Examination may be had from "the Secretaries, the Royal University of Ireland, Dublin."

This Examination consists of three parts:—

(*a.*) Medicine, Theoretical and Clinical, including Therapeutics, Mental Diseases, Medical Jurisprudence, Sanitary Science, and Medical Pathology.

(*b.*) Surgery, Theoretical, Clinical, and Operative, including the use of Instruments and Appliances; Surgical Anatomy; Ophthalmology and Otology,[a] Surgical Pathology.

(*c.*) Midwifery and Diseases of Women and Children.

All Candidates must enter for and go through the entire Examination, but a Candidate may be adjudged to have passed in any of the foregoing parts in which he satisfies the Examiners.

Upon completing satisfactorily his Examination in all three divisions, the Candidate will receive, in addition to the parchment Diplomas recording his admission to the M.B., B.Ch., B.A.O. Degrees, a Certificate of having passed a Qualifying Examination in the subjects of Medicine, Surgery, and Midwifery.

The fee for this Certificate is *Ten Pounds*, which must be paid before admission to these Degrees.

## DIPLOMA IN SANITARY SCIENCE.

This Diploma is conferred only on Graduates in Medicine of the University.

Candidates may present themselves for this Examination after an interval of twelve months from the time of obtaining the M.B., B.Ch., B.A.O. Degrees.

Printed forms of application for admission to this Examination may be had from "the Secretaries, the Royal University of Ireland, Dublin."

In 1902 the Examination for this Diploma will be held towards the end of June.

Every Candidate must, when entering for the Examination, produce[b]:—

(*a.*) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, attended during a period of six months Practical Instruction in a Laboratory approved by the University. The nature of this course is fully indicated by the detailed Syllabus of the Examinations in Physics, Climatology, Chemistry, Microscopy, Bacteriology, &c.

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[a] Candidates at this Examination must exhibit reasonable proficiency in the use of the Ophthalmoscope and Laryngoscope.

[b] These rules (*a*), (*b*), shall not apply to Medical Practitioners registered or entitled to be registered on or before Jan. 1, 1890.

(*b.*) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under (*a.*)) been associated day by day in the duty, routine and special, of Public Health Administration, under the supervision of:—

(1.) In England and Wales, the Medical Officer of Health of a County or of a single Sanitary District having a population of not less than 50,000, or a Medical Officer of Health devoting his whole time to Public Health Work; or

(2.) In Scotland, a Medical Officer of Health of a County or Counties, or of one or more Sanitary Districts having a population of not less than 30,000; or

(3.) In Ireland, a Medical Superintendent Officer of Health of a District or Districts having a population of not less than 30,000; or

(4.) A Medical Officer of Health who is also a Teacher in the Department of Public Health of a recognised Medical School.

⁂ The certificate of an Assistant Medical Officer of Health of a County or of a single Sanitary District having a population of not less than 50,000 may be accepted as evidence under (*b.*), provided the Medical Officer of Health of the County or District in question permits the Assistant Officer to give the necessary instruction and to issue Certificates.

Every Candidate must produce evidence that, after obtaining a registrable Qualification, he has attended during three months the practice of a Hospital for Infectious Diseases at which opportunities are afforded for the Study of Methods of Administration.

The Subjects of this Examination are:—

Physics;
Climatology;
Chemistry;
Microscopy;
Bacteriology;
Geology;
Sanitary Engineering;
Hygiene, Sanitary Law, and Vital Statistics.

The Candidate must draw up reports on the Sanitary condition of Dwelling Houses, or other buildings selected for the purpose.

N.B.—Proficiency in practical work and an adequate acquaintance with the instruments and methods of research which may be employed for Hygienic investigations are indispensable conditions of passing the Examination.

## DIPLOMA IN MENTAL DISEASES.

This Diploma is conferred only on Graduates in Medicine of the University.

Printed forms of application for admission to this Examination may be had from "the Secretaries, the Royal University of Ireland, Dublin."

The subjects for this Examination are those prescribed for the Hutchinson Stewart Scholarship for proficiency in the treatment of Mental Disease.

## BELFAST.

### QUEEN'S COLLEGE.

Clinical instruction is given at the Belfast Royal Hospital. The Ulster Hospital for Diseases of Women and Children, the Belfast Maternity Hospital, the Belfast Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, the Belfast District Lunatic Asylum, and the Belfast Hospital for Sick Children are open to students.

A pamphlet containing full information can be had free on application to the Registrar, Queen's College, Belfast.

## CORK.

### QUEEN'S COLLEGE.

Clinical instruction is given at the North and South Infirmaries (each 100 beds). Students also can attend the Mercy Hospital (60 beds), the Cork Union Hospital, the County and City of Cork Lying-in-Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session at Queen's College extends from October to April inclusive (twenty-seven weeks), but the hospitals are open to students in May, June, and July also, and arrangements have been made for the delivery of some of the three months' Courses of lectures during the months of April, May and June.

## GALWAY.

### QUEEN'S COLLEGE.

Clinical instruction is given at the Galway County Infirmary and the Galway Town Hospital.

*Prizes.*—Attached are eight scholarships of the value of £25 each. The Council may award Exhibitions to matriculated students at the examinations for junior scholarship. All scholarships and exhibitions of the second, third, and fourth years may be competed for by students who have attained the requisite standing in any medical school recognised by the College Council, and have passed the Matriculation Examination in the College, or in the Royal University of Ireland.

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## III.

## ROYAL COLLEGES OF PHYSICIANS AND SURGEONS, IRELAND.

### OUTLINE MEDICAL COURSE APPLICABLE TO CANDIDATES FOR THE LICENCES OF THE ROYAL COLLEGES.

*These Regulations apply to Candidates commencing Medical Study after January 1st,* 1892.

1. Enter for and pass a Preliminary Examination recognised by the General Medical Council.

2. Register as a Medical Student on a form obtainable at the Royal College of Surgeons from the Registrar.

| | | | £ | s. |
|---|---|---|---|---|
| 3. Enter for and attend Courses for the First Professional Examination. | Winter six months | Dissections ... | £5 | 5 |
| | | Chemistry ... | 3 | 3 |
| | | Physics ... | 3 | 3 |
| | Summer three months | Practical Chemistry | 5 | 5 |
| | | Pharmacy ... | 3 | 3 |
| | | Biology ... | 3 | 3 |
| | | | £23 | 2 |

4. Enter for and pass the First Professional Examination.

Fee, £15 15s.
(Matriculated Pupils, R.C.S., £10 10s. See note, page 298).

SUBJECTS OF EXAMINATION.

1. (*a*) CHEMISTRY; (*b*) PHYSICS.
2. PRACTICAL PHARMACY.
3. ELEMENTARY BIOLOGY.
4. ANATOMY, viz.—Bones, with attachments of muscles and ligaments—Joints.

*Candidates may take this Examination as a whole at one time, or in four parts, but no portion earlier than the end of the first Winter Session.*

| | | | £ | s. |
|---|---|---|---|---|
| 5. Enter for and attend Courses for the Second Professional Examination. | Winter six months | Hospital (9 months) | £12 | 12 |
| | | Anatomy ... | 3 | 3 |
| | | Dissections ... | 5 | 5 |
| | | Physiology ... | 3 | 3 |
| | Summer three months | Histology ... | 5 | 5 |
| | | Materia Medica ... | 3 | 3 |
| | | | £32 | 11 |

6. Enter for and pass the Second Professional Examination.

SUBJECTS OF EXAMINATION.[a]

| | |
|---|---|
| Fee, £10 10s. | PART I.—*a.* ANATOMY. *b.* HISTOLOGY. *c.* PHYSIOLOGY—as found in Foster and Shore's "Physiology for Beginners," omitting chapters 5, 6, 7, and 8, and 18, 19, 20, and 21.<br>PART II.—*a.* ADVANCED PHYSIOLOGY (Text-book, Starling's "Elements of Human Physiology." *b.* MATERIA MEDICA. |

The full fee of £10 10s. must be paid when entering for Part I. No fee is payable for Part II., except in case of rejection. No subject can be deferred; but candidates who pass in certain subjects may be allowed credit therefor.

| | | | | |
|---|---|---|---|---|
| 7. Enter for and attend Courses for the Third Professional Examination. | Winter six months | Hospital (18 months[b]) | £25 | 4 |
| | | Dissections ... | 5 | 5 |
| | | Medicine ... | 3 | 3 |
| | | Surgery ... | 3 | 3 |
| | | Midwifery ... | 3 | 3 |
| | | Pathology ... | 3 | 3 |
| | Summer three months | Operative Surgery ... | 5 | 5 |
| | | Public Health and Forensic Medicine | 3 | 3 |
| | | | £51 | 9 |

8. Enter for and pass the Third Professional Examination.[c]

SUBJECTS OF EXAMINATION.

| | |
|---|---|
| Fee, £9 9s. | 1. MEDICINE.<br>2. SURGERY.<br>3. PATHOLOGY.<br>4. THERAPEUTICS.<br>5. PUBLIC HEALTH AND FORENSIC MEDICINE. |

A Candidate must present himself, in the first instance at least, in Medicine, Surgery, Therapeutics, and Pathology. Should he pass in any of these he may, at the discretion of the Examiners, get credit therefor. Public Health and Forensic Medicine may be postponed.

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[a] Candidates registered previous to October 1st, 1898, must pass in Anatomy and Histology, but may defer Physiology and Materia Medica.

[b] In addition to that attended in the Second Year, with evidence of attendance in Fever Wards.

[c] This examination cannot be taken earlier than the end of the Fourth Winter Session.

| | | | |
|---|---|---|---|
| 9. Enter for and attend Courses for the Final Examination. | Maternity Hospital,[*] £6 6s., £8 8s., or ... | £10 | 10 |
| | Ophthalmic Hospital ... | 3 | 3 |
| | Vaccination[*] ... | 1 | 1 |
| | Clinical Instruction in Mental Diseases[*] ... | 3 | 3 |
| | | £17 | 17 |

10. Enter for and pass the Final Examination.

Fee, £6 6s.

SUBJECTS OF EXAMINATION.

1. MEDICINE, including MEDICAL ANATOMY and MENTAL DISEASES.
2. SURGERY, including OPERATIVE SURGERY, SURGICAL ANATOMY, OPHTHALMIC and AURAL SURGERY.
3. MIDWIFERY, including DISEASES OF WOMEN and NEW-BORN CHILDREN, and the THEORY and PRACTICE OF VACCINATION.

Every Candidate must produce evidence that he has acted as Medical Clinical Clerk for three months, and as Surgical Dresser for three months. These appointments cannot be taken concurrently.

Candidates are not admissible to the Final Examination earlier than the end of the Fifth Year of Medical Study.

Candidates may enter for and pass separately in Medicine, Surgery, and Midwifery.

Candidates who hold Foreign or Colonial Qualifications recognised by the Colleges have been accorded certain exemptions, which may be learned on application to the Secretary of the Committee of Management, Royal College of Physicians, Dublin.

## EQUIVALENT EXAMINATIONS.

Candidates are referred for detailed information to the Official Regulations published by the Colleges.

## MATRICULATION AS PUPIL OF THE ROYAL COLLEGE OF SURGEONS.

All persons proceeding to the study of Medicine may, if approved by the Council, become matriculated pupils of the College on payment of five guineas, and having done so, will enjoy the following privileges:—

1. They will, if matriculated before the preliminary examination, be admitted on payment of £1 1s. (half fee).

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[*] May be taken in the Fourth Year.

2. They will be permitted to study in the Library and Museums of the College.

3. Their fee for the First Professional Examination will be reduced by £5 5s.

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## DATES OF CONJOINT EXAMINATIONS.

| | |
|---|---|
| Preliminary - - - | March and September. |
| Professional - - - | April, July, and October. |
| Supplemental Final - - | January. |

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## REGULATIONS FOR CANDIDATES FOR THE CONJOINT DIPLOMA IN PUBLIC HEALTH.

The following regulations are compulsory on all Candidates beginning the study of Sanitary Science after January 1st, 1894; the date of commencement of study being fixed by the date of the certificates.

Stated Examinations for the Diploma in State Medicine commence on the first Tuesday of the months of February, May, and November, and occupy four days.

A special Examination for the Diploma can be obtained—except in the months of August and September—on payment of £10 10s., in addition to the ordinary Fees mentioned below, and on giving notice at least one fortnight before the date of the proposed Examination.

Every Candidate for the Diploma in Public Health must be a Registered Medical Practitioner, or hold a registrable Qualification. He must return his name to the Secretary of the Committee of Management under the Conjoint Scheme, Royal College of Physicians, Dublin, three weeks before the Examination, and lodge with him a Testimonial of Character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh, together with certificates of the prescribed course of study.

Candidates registered as Medical Practitioners or entitled to be so registered after January 1st, 1890, must comply with certain Resolutions passed by the General Medical Council on December 1st, 1893, in regard to Diplomas in State Medicine.

⁂ The *Rules* as to study shall not apply to Medical Practitioners registered, or entitled to be registered, on or before January 1st, 1890.

⁂ The Executive Committee [of the General Medical Council] has power, in special cases, to admit exceptions to the Rules for the Registration of Diplomas in Sanitary Science, and report the same to the General Council.

The Fee for the Examination is Ten Guineas, which must be lodged in the Ulster Bank, Dublin, to the credit of the Committee of Management, at least two weeks before the date fixed for the Examination. Fees are not returned to any Candidate who withdraws from, or is rejected at, any Examination. The Fee for re-examination is Five Guineas.

The Examination for the Diploma in State Medicine comprises the following subjects:—Chemistry and Chemical Physics, Meteorology, Engineering and Architecture, Hygiene, Morbid Anatomy, Vital Statistics, Sanitary Law. There is an Examination in the Laboratory, and also an Oral and Practical Examination.

## IV.

## APOTHECARIES' HALL IN IRELAND.

The First, Second, and Third Professional Examinations are held four times a year—viz., commencing the third Monday in January, April, July, and October.

The final Examinations are held in January and July.

The Fees payable for each Examination are as follow:—

| | | | |
|---|---|---|---|
| First Professional - - | £5 | 5 | 0 |
| Second „ - - | 5 | 5 | 0 |
| Third „ - - | 5 | 5 | 0 |
| Final Examination - - | 6 | 6 | 0 |

Ladies who comply with the regulations will be admitted to these examinations.

Candidates may be admitted to a Special Examination, under special circumstances, which must be laid before the Examination Committee. If the Candidate's application be granted, an extra fee of Ten Guineas over and above the full fee is required.

Candidates already on the Register will receive the Diploma of the Hall, on passing an Examination in the subjects which are not covered by their previous qualifications, and on paying a fee of Ten Guineas. If Medicine or Surgery is required, Two Guineas extra will be charged.

### COURSE OF STUDY FOR THE DIPLOMA.

Candidates who desire to obtain the Letters Testimonial of the Apothecaries' Hall in Ireland must, before proceeding to the

Final Examination, produce evidence of having been registered as a Medical Student for 57 months; also of having attended Courses of Instruction as follows:—

*Winter Courses of Six Months.*

One Course each of the following:—

Anatomy (Lecture).
Chemistry—Theoretical.
Midwifery.
Practice of Medicine.
Physiology, or Institutes of Medicine.
Surgery.
Dissections, two courses of six months each.

*Courses of Three Months.*

One Course of each of the following:—

Materia Medica.
Medical Jurisprudence.
Chemistry—Practical.
Practical Physiology and Histology.
Operative Surgery.
Physics.
Clinical Ophthalmology.
Biology.
Clinical Instruction in Mental Disease.
Pathology.
Vaccination.

Medico-Chirurgical Hospital, twenty-seven months, to be distributed at the Student's own discretion over the last four years of his study. The Candidate may substitute for nine months in this Hospital Attendance six months as a Resident Pupil. He will be required to present a certificate of having taken notes of at least six Medical and six Surgical cases recorded under the supervision, respectively, of a Physician and Surgeon of his Hospital.

Three months' study of Fever—which may be included in his twenty-seven months' Hospital Attendance—in a Hospital containing Fever Wards, and having taken notes of five cases of Fever—viz., either Typhus, Typhoid, Scarlet Fever, Small-pox or Measles.

Six months' Practical Midwifery and Diseases of Women during the Winter or Summer of the third or the fourth year, at a recognised Lying-in Hospital, or Maternity.

Three months' Practical Pharmacy, in a recognised Clinical Hospital or a recognised School of Pharmacy, or a year in the Compounding Department of a Licentiate Apothecary or a Pharmaceutical Chemist.

Each Candidate, before receiving his Diploma, must produce evidence that he has attained the age of twenty-one years.

## EXAMINATIONS FOR THE DIPLOMA.

All information relative to the Examinations may be obtained from the Registrar of the Apothecaries' Hall, 40 Mary-street, Dublin.

## DENTAL EDUCATION AND EXAMINATIONS IN IRELAND.[a]

The Royal College of Surgeons in Ireland grants Diplomas in Dental Surgery under conditions of which the following is a synopsis:—

The Candidate must be twenty-one years of age.

The Candidate must have passed three Examinations.

1. Preliminary (identical with the Medical Preliminary).
2. Primary Dental. Fee, £10 10s. (This Examination is much the same as the Second Conjoint Professional.)
3. Final Dental Examination. Fee, £10 10s. Candidates are examined in Dental Surgery and Pathology, and in Dental Mechanics, including the Metallurgy of the workshop.

    Candidates are required to do gold fillings, and construct mechanical work in the presence of the Examiners.

The Certificates required may be divided into General and Special.

1. The General Certificates required are about the same as those required by the Medical Student for the Second Conjoint Professional Examination.

The Special Certificates may be subdivided into—

1. Dental Hospital. 2. Practical Mechanical Dentistry.

    1. Dental Hospital. Two years' attendance, with Lectures in Dental Surgery and Pathology and in Dental Mechanics. Fee, £28 7s.
    2. Practical Mechanical Dentistry. Three years' instruction from a Registered Dentist. The fee for this is variable, but may be set down at from £50 to £150.

Large reductions in the Special Certificates required are made in the cases of qualified Medical Practitioners.

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[a] Fuller particulars can be obtained by application to the Registrar, Royal College of Surgeons, St. Stephen's-green, Dublin.

## HOSPITALS.

The following information respecting Hospitals in Dublin will prove of interest:—

### MEATH HOSPITAL AND COUNTY DUBLIN INFIRMARY.

The Meath Hospital was founded in 1753, and was constituted the County Dublin Infirmary by Act of Parliament in 1774. The original hospital was situated in the Coombe, in the building which is now the Coombe Lying-in Hospital. The new or present Meath Hospital was opened for the reception of patients on December 22, 1822. It occupies an open and extensive site of three acres abutting on Heytesbury-street, the buildings consisting of a general medico-chirurgical hospital with some 120 beds, an infectious wing containing about 40 beds, a large extern department, laundry, *post-mortem* room and mortuary, and pathological laboratory. There is a fully-equipped Convalescent Home at Bray in connection with the Hospital, and in this way a quick succession of medical and surgical cases is secured. Special attention is paid to Children's Diseases, and the Infectious Fevers can be studied under exceptionally favourable conditions in the Epidemic Wing. Large numbers of Extern Patients are seen and treated daily in the Dispensary attached to the Hospital.

Clinical Clerks are appointed to take charge of the medical patients for periods of six months. Surgical Resident Pupils hold office for periods of three months. The post of House Surgeon is filled up annually, and is open to past Pupils of the Hospital who hold the requisite registrable Qualifications in Medicine, Surgery, and Midwifery.

Mr. Richard Lane Joynt, F.R.C.S.I., Hon. Secretary to the Medical Board, 85 Harcourt-street, Dublin, will furnish full information to intending pupils or their friends.

### MERCER'S HOSPITAL.

This Hospital, founded in 1707, is situated in the centre of Dublin, in the immediate vicinity of the Schools of Surgery of the Royal College of Surgeons, the Catholic University School of Medicine, and within five minutes' walk of Trinity College. It contains 120 beds for Medical and Surgical cases, and arrangements have been made with the Medical Officers of Cork-street Fever Hospital whereby all Students of this Hospital are entitled to attend the Clinical Instruction of that Institution, and become eligible for the posts of Resident Pupil, &c. There is a large Outpatient Department and a Special Department for Diseases Peculiar to Women. There are also special wards for the treatment and study of Children's Diseases. During the past few years the Hospital has undergone extensive alterations in order to bring it up to modern requirements.

*Appointments.*—A House Surgeon is appointed annually. Five Resident Pupils are appointed, each for six months, and Clinical Clerks and Dressers are appointed monthly from amongst the most deserving members of the class. *Fees.*—Winter, six months, £8 8s.; summer, three months, £5 5s.; nine months, £12 12s. The certificates of this Hospital are recognised by all the Licensing Bodies.

For further particulars application should be made to R. Charles B. Maunsell, M.B., F.R.C.S.I., 32 Lower Baggot-street, Dublin.

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### RARE PNEUMONOCOCCIC INFECTIONS.

PSEUDO-MEMBRANOUS inflammation of the visible mucous membranes and of the gastro-intestinal tract resulting from infection by the pneumococcus is reported by Cary and Lyon (*American Journal of the Medical Sciences*, September, 1901). The report is accompanied by an interesting review of the few known cases of this character reported.

### FILARIAL INFECTION OF THE ABDOMINAL LYMPHATICS.

OPIE (*American Journal of the Medical Sciences*, September, 1901) reports an interesting case of filarial infection of the abdominal lymphatics in which the condition had been mistaken for a strangulated femoral hernia. An exploratory incision over the supposed hernia revealed that it consisted of a mass of dilated lymph channels containing nematode worms. The author directs attention to the curious fact that the lymphatic vessels throughout the varix did not contain lymph, but were filled with blood, suggesting a regurgitation at some point of communication between the venous and lymphatic systems.

### THE BLOOD IN LEAD POISONING.

WHITE AND PEPPER (*American Journal of the Medical Sciences*, September, 1901), in a careful study of the granular degeneration of the erythrocytes, which occurs in lead poisoning, conclude that the granules are the result of a true degeneration of the erythrocytes, and have no relation to nuclear fragmentation or to polychromatophilia.

# ROYAL ACADEMY OF MEDICINE IN IRELAND.

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President—**Lombe Atthill**, M.D., F.R.C.P.I.
General Secretary—**John B. Story**, M.B., F.R.C.S.I.

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## SECTION OF PATHOLOGY.

President—A. C. O'Sullivan, M.D.
Sectional Secretary—E. J. McWeeney, M.D.

*Friday, May 3, 1901.*

The **President** in the Chair.

### *Puerperal Osteophyte.*

**Professor E. H. Bennett** presented three specimens of the puerperal osteophyte of Rokitansky. Having demonstrated the deposit in two of these in its ordinary seat—the inner surface of the bones of the calvaria of women pregnant at the full term and at the sixth month—he showed the third as being remarkable in the presence of the deposit over the surface of all parts of the skeleton, except the inner surface of the calvaria. The subject of this exceptional distribution was a rickety dwarf, who died at the onset of labour at the close of a full period of pregnancy. She had been previously successfully delivered by the Cæsarean section.

**Professor McWeeney** asked did these osteophytes disappear between the individual pregnancies, and, if not, did accretions take place during each pregnancy? If the latter were the case, one would expect to find specimens of remarkably large size in women who had borne many children, and he did not remember to have seen such a condition. Had Mr. Bennett ever investigated their microscopic appearance to determine if there were any relation of the newly-formed spicules of bone to the periosteum, and any grouping of the bone-forming cells? The interior of the smaller pieces of cranial bones struck him as presenting a condition of loss of substance rather than accretion; one might almost imagine that cells like osteoclasts had been at work and cut little channels in them. They very rarely had opportunities in Dublin of examining carefully macerated and properly prepared specimens of rickets, and he would be glad if Mr. Bennett would point out the leading features upon which he relied in demonstrating the skeleton as an exquisite example of the condition.

**Dr. Travers Smith** asked what became of the brown bone which was said to be present in the recent state? Could the condition be due to the absorption of calcium salts in the inter-cellular substance of the bone during pregnancy?

**Mr. Bennett**, in reply, said he did not see how anyone could hesitate to say the specimens were examples of deposit and not of absorption. The ribs and humeri showed the dark-coloured deposit, which was unchanged by maceration. He had no doubt there were repeated deposits in many cases. The skull felt like pumice stone, and deposited a fluff on one's hand. A full demonstration of the rickety details would take a long time. The lines of the epiphyses were still retained on the cristæ ilii, and there was an extraordinary development of the sacrum backwards, and the whole pelvis presented a remarkable appearance. Perhaps the point of greatest interest was the condition of the spine. Except in the sacral region, the normal curves were obliterated, and the spine was straight. There was great shortening of the lower limbs as compared with the trunk. The teeth, contrary to what one would expect, were in an excellent condition. The costal cartilages were ossified—a very rare condition in the female.

### *Tubercular Pericarditis.*

**Dr. Dempsey** described the interesting clinical details. P. D., a dairyman, was admitted to the Mater Misericordiæ Hospital on February 15, complaining of some pain at the lower part of the sternum, and of cough. Patient is a well-nourished man of good physique; no personal or family history of rheumatism; both parents alive and in good health. The present illness commenced a week before admission rather suddenly, with shivering, pain in head and back. On admission—Pale face, but no cyanosis; breathing somewhat hurried, 24 to the minute; pulse, 108; regular, fairly strong; temperature, 101°; heart's impulse invisible, and its sounds weak, especially at the apex. Along the left edge of the sternum a loud and very rough to-and-fro friction sound was distinctly heard. The area of the heart dulness extended in the upward direction to the upper border of the left third rib, to the left just beyond the nipple line, and in the opposite direction, to the right edge of the sternum. The lungs, which were emphysematous, seemed otherwise normal. The urine contained no albumen. During the first fortnight his condition showed little change beyond an increase in the area of dulness, which, maintaining its triangular shape, reached upwards to the second rib, and broadened about an inch laterally in each direction. The pulse, though frequent (100–120), remained regular, and of fair strength. The friction rub still persisted. At this time a soft semi-elastic swelling, not distinctly pitting on pressure, appeared in front just above and below the right clavicle. The swelling gave rise to some pain, but gradually lessened, and had disappeared in four or five days. Four weeks later fluid had accumulated in the left pleura, reaching nearly to the angle of the scapula, and as the withdrawal of this gave no relief, the breathing laboured, and the pulse rapid and irregular, it was determined to evacuate the pericardial fluid. Accordingly, on the 14th of March, my colleague, Mr. Hayes, operating, the fifth left intercostal space was incised, B. eucaine previously injected, the internal mammary vessels tied, the pleura pushed aside, and the pericardium incised, and about 50 oz. of clear fluid evacuated. A little of the latter, collected in a sterilised tube, was subsequently found to contain the tubercle bacilli. After the operation the patient felt much relieved, but on the evening of the same day died rather suddenly.

DR. MCWEENEY then gave an account of the pathological aspect of the case. He had been greatly interested by finding in the scanty sediment obtained by centrifuging the fluid collected at the operation, a polynuclear leucocyte, containing about six distinct tubercle bacilli in two groups of three lying on each side of the nuclei. These were the only bacilli to be found in the whole preparation, and had enabled him to make the diagnosis *intra-vitam.* He then detailed the *post-mortem* appearances as follows:—The parietal pericardium was greatly thickened. On section a thin white line could be seen, corresponding to the original position of the serous membrane. Inside of this was a newly-formed layer of tissue, in which small areas of caseation could be made out with the naked eye. The outer surface showed here and there miliary tubercles; these were especially prominent and numerous at the back near the middle line. The inner surface was rough and shaggy from adherent fibrinous exudate. Under the microscope the parietal pericardium showed:—

1. An outside layer, consisting of bundles of white fibrous tissue, running parallel to the surface. Between the bundles were rather more cells than usual, and the tissue was decidedly œdematous. This part corresponded to the original pericardial membrane.

2. Internal to this was a layer of what might be termed germinal tissue, consisting of small uninucleated cells, and oval or elongated "fibroblastic" cells, together with numerous thin-walled blood-vessels,

all being evidently of new formation. Scattered about in this tissue were single giant-cells, giant-cell systems, and caseous areas devoid of giant-cells, the whole being perfectly characteristic of a somewhat chronic tuberculous process. There were in this tissue two other features worthy of note—

(*a*) Thrombosis, with organisation of the thrombus, in several of the small blood-vessels, the lumen being partly filled with structureless fibrin, and partly with fibroblasts; and

(*b*) The presence between the various tissue elements of hyaline masses of irregular shape. They often lay in empty spaces, were abundant near the caseous areas, and on close examination appeared to represent the corpuscular contents of small blood-vessels which had undergone disintegration and hyaline degeneration owing to the presence of the tubercular toxin in their neighbourhood. Many of the more irregularly-shaped hyaline masses were evidently due to the degeneration of masses of effused red corpuscles.

In the caseous areas, but not in the giant-cells, tubercle bacilli were present, though somewhat sparingly. The visceral pericardium was also greatly thickened, in some places attaining half an inch in thickness. It was everywhere covered with a thick whitish layer of fibrinous exudate, and presented numerous bright red hæmorrhagic areas, some of which were as big as a half-crown. On section it was thickly studded with minute tubercles and caseating areas. The microscope showed—(1) a layer of loose, sparsely cellular connective tissue with large vessels, in contact with the myocardium; (2) a layer of small round cells of lymphoid aspect.

3. Superficial to this, a layer of tubercular granulation tissue, similar to that already described in connection with the parietal pericardium. The giant-cell systems were larger and more numerous, however. The caseous areas were always encircled with a ring of fibroblastic elements.

4. Most superficial of all was a layer of fibrin which was quite structureless and devoid of cells, save at the extreme periphery, where it contained a number of degenerate cells, seemingly polynuclear.

Tubercle bacilli were demonstrable in the caseous areas and in the superficial layer of the fibrinous part, but were nowhere abundant. A few giant-cells also contained them. The hæmorrhagic spots above alluded to were shown to contain a surprisingly large number of thin-walled vessels of new formation, some of which had ruptured. The vascularity of some of the superficial parts of the tubercular granulation tissue was highly remarkable. Sections from a piece of sub-epicardial fat from one of the auricular appendices showed numerous minute tubercles, each consisting of a single giant-cell system embedded in a highly vascular round cell granulation tissue. The tubercular process was beneath the epicardial endothelium, and superficial to the fat cells. The right lung presented nothing remarkable save a small outbreak of miliary tubercles on the posterior surface, all of them lying on the pleura. The left lung was collapsed and almost airless. The posterior aspect of the pleura, its diaphragmatic surface, the adjoining surfaces of the lobes and the tissue between it and the pericardium were thickly studded with miliary tubercles. On section the collapsed pulmonary parenchyma was seen to be studded with extremely minute tubercles, scarcely visible to the unassisted eye, and evidently of recent origin. The microscopic examination of the pleura showed the minute tubercles to consist of small areas of caseation, surrounded by fibroblasts. They were embedded in a sort of fibroblastic granulation tissue, which also contained giant-cells. Newly-formed blood-vessels were *not* a marked feature of this material, and tubercle bacilli were not seen. They must certainly have been very scarce. The sections also showed much œdema of the collapsed lung. Microscopic sections of the adjacent surfaces of the pleura and pericardium, showing the intervening tissue, including the phrenic nerve, were also made. The pericardium was thickly studded with minute tubercles, densely infiltrated with small cells, and the intervening space was filled up partly with adipose tissue and partly with a reticular network of fibrin. The branches of the phrenic nerve, 8 in number, did not present a very typical appearance, axis cylinders and myelin sheaths being only recognisable with difficulty. A lymphatic gland in a completely caseated state, and about as big as a bean, was found in the posterior mediastinum close to the convexity of the aortic arch, to the left of which it lay. It is to infection from this gland, or perhaps from a similar one left behind at the autopsy, that the infection of the pericardium is in all probability to be traced.

**Professor O'Sullivan** said the two cases of tubercular pericarditis which he had seen differed from Dr. Dempsey's in having absolute adhesion of the pericardial layers together and no fluid. They must all have wondered, from time to time, at the small number of tubercle bacilli found in such cases. Two cases in which he had found tubercle bacilli in large numbers were very rapid infections of the lung. One case was a universal infection and rapid death in a child. To the naked eye the whole lung was practically solid, and on section showed an almost entirely serous exudate in the alveoli. The other was a case of caseating pneumonia which spread over the lung and caused death quickly. These cases went to show that in the more chronic cases the bacilli must have been present, and in the later stages must have ceased to be capable of staining. It was quite inconceivable that such huge alterations could have been caused by the few bacilli found.

### *Some further Notes on the Application of X-rays to Dental Pathology.*

**Mr. George J. Goldie** made a communication on some pathological conditions met with in the mouth and teeth in which he had found the X-rays helpful. It formed an addendum to a paper on the same subject read by him before the same Academy last year, and was illustrated on the screen by numerous lantern slides. He dealt chiefly on this occasion with the assistance to be derived by the dentist in approaching the subjects of—(*a*) Regulation of the teeth; (*b*) treatment of dead and abscessed teeth; (*c*) gouty pericementitis in living teeth; (*d*) gouty abscess; (*e*) malignant disease of the jaw; demonstrating each of these by slides of X-ray photographs taken in actual practice. Perhaps the most striking slide was one of a small round-celled sarcoma of the lower jaw detected in an early stage by the use of X-rays, but all the skiagrams shown amply confirmed the great usefulness of Röntgen photography in dental pathology and practice.

The Section then adjourned.

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## CASE OF DIRECT TUBERCULAR INFECTION.

Direct infection of a nurse from a consumptive patient is reported by Stewart (*American Journal of the Medical Sciences*, September, 1901) in the description of a case of acute splenic miliary tuberculosis. The patient was a young woman who had had no evidence of tubercular infection prior to her attendance upon a phthisical patient. The patient was in poor circumstances, and had apartments which were badly heated and damp, and the nurse's nourishment while attending him was of very poor quality. In the middle of her second week of atttendance upon the case she became acutely ill, and died 68 days later, the autopsy revealing a universal tubercular infection.

# SANITARY AND METEOROLOGICAL NOTES.

Compiled by Sir J. W. Moore, B.A., M.D. Univ. Dubl.;
F.R.C.P.I.; F. R. Met. Soc.;
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

## Vital Statistics

*For four weeks ending Saturday, September* 7, 1901.

## IRELAND.

### Twenty-two Town Districts.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending September 7, 1901, in the Dublin registration area and the twenty-one principal provincial urban districts of Ireland was 19·5 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,079,708. The deaths registered in each of the four weeks ended Saturday, September 7, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

| Towns, &c. | Week ending | | | | Average Rate for 4 weeks | Towns, &c. | Week ending | | | | Average Rate for 4 weeks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Aug 17 | Aug 24 | Aug. 31 | Sept. 7 | | | Aug. 17 | Aug. 24 | Aug. 31 | Sept. 7 | |
| 22 Town Districts | 19·9 | 21·6 | 20·3 | 19·5 | 20·3 | Lisburn - | 31·9 | 9·1 | 13·7 | 18·2 | 18·2 |
| Armagh - | 20·7 | 20·7 | 13·8 | 6·9 | 15·5 | Londonderry | 17·0 | 15·7 | 7·8 | 19·6 | 15·0 |
| Ballymena | 4·8 | 33·5 | 0·0 | 14·4 | 13·2 | Lurgan - | 31·0 | 17·7 | 31·0 | 8·9 | 22·1 |
| Belfast - | 21·3 | 22·3 | 22·3 | 21·3 | 21·8 | Newry - | 12·4 | 45·6 | 33·1 | 20·7 | 27·9 |
| Clonmel - | 5·1 | 40·9 | 10·2 | 15·3 | 17·9 | Newtownards | 28·6 | 17·2 | 0·0 | 22·9 | 17·2 |
| Cork - | 23·3 | 13·7 | 24·7 | 19·2 | 20·2 | Portadown - | 10·4 | 15·6 | 15·6 | 20·8 | 15·6 |
| Drogheda - | 24·5 | 20·4 | 8·2 | 4·1 | 14·3 | Queenstown | 6·6 | 33·1 | 19·8 | 19·8 | 19·8 |
| Dublin (Reg. Area) - | 19·9 | 24·5 | 23·5 | 20·6 | 22·1 | Sligo - | 9·6 | 43·2 | 4·8 | 9·6 | 16·8 |
| Dundalk - | 8·0 | 8·0 | 4·0 | 16·0 | 9·0 | Tralee - | 31·9 | 15·9 | 10·6 | 15·9 | 18·6 |
| Galway - | 11·7 | 15·5 | 7·8 | 15·5 | 12·6 | Waterford - | 9·7 | 7·8 | 15·6 | 13·6 | 11·7 |
| Kilkenny - | 29·8 | 34·8 | 5·0 | 19·9 | 22·4 | Wexford - | 46·7 | 9·3 | 23·4 | 32·7 | 28·0 |
| Limerick - | 13·7 | 11·0 | 12 8 | 11·0 | 12·0 | | | | | | |

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases registered in the 22 districts during the week ended Saturday, September 7, were equal to an annual rate of 4·9 per 1,000—the rates varying from 0·0 in twelve of the districts to 19·8 in Queenstown—the three deaths registered in that district being from diarrhœa. Among the 143 deaths from all causes registered in Belfast are 4 from measles, one from scarlatina, 5 from whooping-cough, 2 from diphtheria, 2 from ill-defined fever, 13 from enteric fever, and 18 from diarrhœa. The 28 deaths from all causes in Cork include 2 from whooping-cough and 5 from diarrhœa; and the 7 deaths in Wexford include one from typhus and 2 from diarrhœa.

## DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of the Area, estimated to the middle of 1901, is 375,076, being made up of the following:—City, 290,837; Rathmines, 32,589; Pembroke, 25,563; Blackrock, 8,727; and Kingstown, 17,360.

In the Dublin Registration Area the births registered during the week ended Saturday, September 7, amounted to 234—132 boys and 102 girls; and the deaths to 154—79 males and 75 females.

### DEATHS.

The deaths, which are 19 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21·4 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the area, the rate was 20·6 per 1,000. During the thirty-six weeks ended Saturday, September 7, the death-rate averaged 27·0, and was 0·2 over the mean rate for the corresponding portions of the ten years, 1891–1900, based on the estimated mean population of the Dublin Registration Area as then constituted.

Thirty-eight deaths from zymotic diseases were registered—a number which is equal to a rate of 5·3 per 1,000 of the estimated population, which was also the average rate for the 36th week of the past ten years. The 38 deaths are 4 under the number registered during the preceding week, and include 29 from diarrhœa, 2 each from scarlatina and whooping-cough, and one each from typhus fever, influenza, diphtheria, and choleraic diarrhœa.

Tubercular diseases caused 34 deaths, comprising 25 from pulmonary tuberculosis, 3 from tubercular meningitis, 4 from tabes mesenterica, and 2 from scrofula.

Diseases of the respiratory organs caused 12 deaths, equal to a rate of 1·7 per 1,000 of the estimated population, the average weekly rate for the past ten years being 2·7. Of the 12 deaths 5 were caused by pneumonia and 6 by bronchitis.

The deaths of 8 children under 5 years of age, of whom 6 were under one year old, including 2 infants under one month, were attributed to convulsions.

Three deaths were caused by apoplexy, and 9 from other diseases of the brain and nervous system (exclusive of convulsions).

Diseases of the circulatory system caused 9 deaths and cancer 6.

One accidental death was registered.

In 5 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the deaths of 3 infants under one year old and the deaths of 2 persons aged 60 years and upwards.

Sixty-four of the persons whose deaths were registered during the week were under 5 years of age (51 being infants under one year, of whom 14 were under one month old), and 27 were aged 60 years and upwards, including 15 persons aged 70 and upwards, of whom 5 were octogenarians.

## STATE OF INFECTIOUS DISEASE IN DUBLIN.

### (1.) CASES OF INFECTIOUS DISEASES NOTIFIED TO THE PUBLIC HEALTH COMMITTEE OF THE CORPORATION.

Sir Charles Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of Infectious Diseases in the City of Dublin, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | | |
|---|---|---|---|
| Week ending | August | 17, 1901... | ... 29 cases. |
| „ | August | 24, „ ... | ... 47 cases. |
| „ | August | 31, „ ... | ... 61 cases. |
| „ | September | 7, „ ... | ... 59 cases. |

Of the 59 cases notified in the last week of the period, 16 were erysipelas, 19 enteric fever, 15 scarlatina, 6 continued fever, one typhus fever, and 2 measles.

### (2.) CASES OF INFECTIOUS DISEASES IN RATHMINES URBAN DISTRICT.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | |
|---|---|---|
| Week ending | August 17, 1901... | ... 7 cases. |
| „ | August 24, „ ... | ... No case notified. |
| „ | August 31, „ ... | ... No case notified. |
| „ | September 7, „ ... | ... 5 cases. |

Of the 5 cases notified in the last week, 2 were diphtheria, one was scarlet fever, one was typhoid fever, and one dysentery.

### (3.) CASES OF INFECTIOUS DISEASES IN PEMBROKE URBAN DISTRICT.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Pembroke, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | |
|---|---|---|
| Week ending | August 17, 1901... | ... 27 cases. |
| „ | August 24, „ ... | ... 13 cases. |
| „ | August 31, „ ... | ... 7 cases. |
| „ | September 7, „ ... | ... 10 cases. |

Of the 10 cases notified in the last week, 3 were erysipelas, one typhoid fever, one whooping-cough, 2 measles, and 3 continued fever.

### (4.) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Fourteen cases of enteric fever were admitted to hospital during the week ended Saturday, September 7; 13 patients were discharged, and 34 remained under treatment at the close of the week.

Twelve cases of scarlatina were admitted to hospital, 6 patients were discharged, 2 died, and 47 remained under treatment at the close of the week. This number is exclusive of 8 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Two diphtheria patients were admitted, 3 were discharged, one died, and 13 remained under treatment at the close of the week.

The hospital admissions for the week under review also included one case of typhus fever, one patient was discharged, one died, and 7 cases of the disease remained under treatment at the close of the week.

In addition to the above-mentioned zymotic diseases recognised as such, 2 cases of pneumonia were admitted to hospital, 6 patients were discharged, one died, and 13 remained under treatment at the close of the week.

## STATE OF INFECTIOUS DISEASE IN BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | | | |
|---|---|---|---|---|
| Week ending | August | 17, 1901... | ... | 177 cases. |
| „ | August | 24, „ ... | ... | 187 cases. |
| „ | August | 31, „ ... | ... | 170 cases. |
| „ | September | 7, „ ... | ... | 148 cases. |

Of the 148 cases notified in the week ended Saturday, September 7, 82 were enteric fever, 6 erysipelas, 8 diphtheria, 48 continued fever, 3 scarlet fever, and one puerperal fever.

## ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, September 7, in thirty-three large English towns, including London (in which the rate was 16·9), was equal to an average annual death-rate of 19·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17·8 per 1,000, the rate for Glasgow being 17·1, and for Edinburgh 16·7.

## METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat.* 53° 20′ *N., Long.* 6° 15′ *W., for the Month of August,* 1901.

| | |
|---|---|
| Mean Height of Barometer, - - - | 30·013 inches. |
| Maximal Height of Barometer (20th, at 9 a.m.), | 30·475 „ |
| Minimal Height of Barometer (25th, at 9 p.m.), | 29·554 „ |
| Mean Dry-bulb Temperature, - - | 58·8°. |
| Mean Wet-bulb Temperature, - - | 55·7°. |
| Mean Dew-point Temperature, - - | 52·9°. |
| Mean Elastic Force (Tension) of Aqueous Vapour, | ·403 inch. |
| Mean Humidity, - - - - | 81·5 per cent. |
| Highest Temperature in Shade (on 8th), - | 76·9°. |
| Lowest Temperature in Shade (on 28th), - | 44·2°. |
| Lowest Temperature on Grass (Radiation) (28th), | 39·7°. |
| Mean Amount of Cloud, - - - | 57·8 per cent. |
| Rainfall (on 13 days), - - - | 2·952 inches. |
| Greatest Daily Rainfall (on 10th), - - | ·892 inch. |
| General Directions of Wind, - - - | N.W.,S.W.,W. |

### *Remarks.*

Taken as a whole, August, 1901, must be regarded as a favourable month both for health and for vegetation. Rain fell heavily at times, but there were intervening spells of very fine weather—notably from the 16th to the 25th. On this last-named day a very remarkable and sudden fall in temperature took place, from 75·8° to 49·3° in a few hours, and a series of cold nights followed. In fact low temperatures by night were a feature of the month. Bright sunshine was estimated at 194 hours, or a daily average of 6·3 hours, compared with 208·1 hours in July, or a daily average of 6·7 hours.

In Dublin the arithmetical mean temperature (60·5°) was slightly above the average (59·7°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 58·8°. In the thirty-six years ending with 1900, August was coldest in 1881 (M. T.=57·0°), and warmest in 1899 (M. T.=63·4°). In 1900 the M. T. was 59·5°.

The mean height of the barometer was 30·013 inches, or 0·116 inch above the corrected average value for August—namely, 29·897 inches. The mercury rose to 30·475 inches at 9 a.m. of the 20th, and fell to 29·554 inches at 9 p.m. of the 25th. The observed range of atmospheric pressure was, therefore, 0·921 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 58·8°. It was 3·5° below the value for July, 1901. Using the formula, *Mean Temp.*= *Min.* + (*Max.* — *Min.* × ·47), the mean temperature was 60·0° or 0·7° above the average mean temperature for August, calculated in the same way, in the twenty-five years, 1865–89, inclusive (59·3°). The arithmetical mean of the maximal and minimal readings was 60·5°, compared with a twenty-five years' average of 59·7°. On the 8th the thermometer in the screen rose to 76·9°—wind, W.S.W.; on the 28th the temperature fell to 44·2°—wind, N.W. The minimum on the grass was 39·7°, also on the 28th.

The rainfall was 2·952 inches, on 13 days. The average rainfall for August in the twenty-five years, 1865–1889, inclusive, was 2·825 inches, and the average number of rainy days was 15·5. The rainfall, therefore, was slightly above the average, while the rainy days were still more markedly below it. In 1900 the rainfall in August was very large—5·871 inches on 17 days, establishing a record for August in Dublin; in 1889, 5·747 inches were registered on 22 days. On the other hand, in 1884, only ·777 inch was measured on 8 days.

High winds were noted on 12 days, but attained the force of a gale only on the 26th and 30th. Temperature reached 70° in the screen on 7 days, compared with 18 days in August, 1899, and 6 days in August, 1900. The atmosphere was foggy on the 21st and 30th. There were no electrical disturbances.

The rainfall in Dublin during the eight months ending August 31st amounted to 14·384 inches on 106 days, compared with 23·480 inches on 146 days in 1900, 18·200 inches on 117 days in 1899, 16·516 inches on 124 days in 1898, 19·388 inches on 149 days in 1897, 14·464 inches on 120 days in 1896, 9·455 inches on 96 days during the same period in 1887, and a twenty-five years' average of 17·558 inches on 128·1 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 3·625 inches on 15 days, compared with 5·995 inches on 16 days in 1900, 2·640 inches on 11 days in 1899, 3·185 inches on 18 days in 1898, 6·195 inches on 27 days in 1897, and 1·245 inches on 14 days in 1896. Of this quantity ·700 inch fell on the 10th, and ·920 inch on the 30th. The total fall since January 1 amounts to 19·685 inches on 100 days, compared with 29·326 inches on 136 days in 1900, 25·630 inches on 120 days in 1899, 17·830 inches on 112 days in 1898, 25·945 inches on 143 days in 1897, 14·327 inches on 91 days in 1896, 22·685 inches on 107 days in 1895, 25·206 inches on 131 days in 1894, and 16·341 inches on 106 days in 1893.

Dr. B. H. Steede reports that at the National Hospital, Newcastle, Co. Wicklow, the rainfall was 3·055 inches on 15 days, compared with 3·988 inches on 12 days in 1900, 1·877 inches on 13 days in 1899, 3·803 inches on 16 days in 1898, and 4·526 inches on 20 days in 1897. The heaviest falls were ·865 inch on the 10th, and ·678 inch on the 30th. Since January 1, 1901, the rainfall at this Second Order Station has been 16·646 inches on 100 days, compared with 24·144 inches on 130 days in the first eight months of 1900, 23·748 inches on 117 days in those of 1899, and 20·101 inches on 110 days in those of 1898. The maximal temperature in the shade was 75·0° on the 25th, and the minimum temperature was 44·0° on the 29th.

At the Railway Hotel, Recess, Co. Galway, 8·832 inches of rain fell on 18 days, compared with 6·050 inches on 15 days in 1900. The largest falls were 2·000 inches on the 11th, ·960 inch on the 25th, ·810 inch on the 17th, and ·770 inch on the 16th. It was very fine from the 18th to the 25th.

At Cloneevin, Killiney, Co. Dublin, the rainfall was 2·83 inches on 14 days, ·60 inch being measured on 30th. The average rainfall for August in the 16 years 1885–1900 was 3·225 inches on 16·8 days. Since January 1, 1901, 16·37 inches of rain have fallen at this station on 109 days. Mr. Robert O'Brien Furlong, C.B., M.A., the observer at Cloneevin, points out a curious coincidence in the rainfalls and number of rainy days in January (2·83 inches on 15 days), July (2·80 inches on 13 days), and August (2·83 inches on 14 days).

Dr. Arthur S. Goff reports that at Lynton, Dundrum, County Dublin, rain fell on 16 days in August, the total measurement being 3·11 inches, and the heaviest rainfall in 24 hours being ·91 inch on the 10th. The mean shade temperature was 60·5°, the range being from 76° on the 8th to 46° on the 28th.

At Broomfield, Howth, Co. Dublin, 2·81 inches of rain fell on 13 days during August.

### *The Rainfall and Temperature of July,* 1901, *at Newcastle, Co. Wicklow.*

Dr. B. H. Steede returns the rainfall in July as 2·052 inches on 10 days, ·630 inch having been recorded on the 24th and ·504 inch on the 25th. The maximal shade temperature was 79·0° on the 17th, the minimum was 44·0° on the 7th.

## ANEURYSM IN A CHILD.

JOHNSON (*American Journal of the Medical Sciences*, September, 1901) reports a case of hæmorrhage from the ear in a child, with a swollen mass in the tonsillar region, resulting from an aneurysm of the internal carotid artery. The case was under observation from March to September, and during that time was seen by many consultants, without a correct diagnosis being attained. The child died suddenly of hæmorrhage. The symptoms were : fever, nausea, pain, and other symptoms of quinzy, with occasional bleeding from the ear.

## THIRTEENTH INTERNATIONAL MEDICAL CONGRESS, PARIS, 1900.

THE General Secretary has the honour to inform the members of the Thirteenth International Congress of Medicine that the printing and forwarding of the general volume and of the seventeen records of the sections is now entirely finished. Any member who, by mistake, may not have received the volumes to which he is entitled is hereby requested to address a statement to that effect to the publishers of the Congress, Messrs. Masson & Co., 120 Boulevard Saint Germain, Paris. After the 31st of December, 1901, no representation will be acknowledged.

# PERISCOPE.

## BRITISH CONGRESS FOR THE PREVENTION OF TUBERCULOSIS.

THE following Resolutions were passed at the closing General Meeting of the above Congress, held at Queen's Hall, London, on Friday, July 26, 1901:—1. That tuberculous sputum is the main agent for the conveyance of the virus of tuberculosis from man to man, and that indiscriminate spitting should therefore be suppressed. 2. That it is the opinion of this Congress that all public hospitals and dispensaries should present every patient suffering from phthisis with a leaflet containing instructions with regard to the prevention of consumption, and should supply and insist on the proper use of a pocket spittoon. 3. That the voluntary notification of cases of phthisis attended with tuberculous expectoration, and the increased preventive action which it has rendered practicable, has been attended by a promising measure of success, and that the extension of notification should be encouraged in all districts in which efficient sanitary administration renders it possible to adopt the consequential measures. 4. That the provision of sanatoria is an indispensable part of the measures necessary for the diminution of tuberculosis. 5. That, in the opinion of this Congress and in the light of the work that has been presented at its sittings, Medical Officers of Health should continue to use all the powers at their disposal, and relax no effort to prevent the spread of tuberculosis by milk and meat. 6. That, in view of the doubts thrown on the identity of human and bovine tuberculosis, it is expedient that the Government be approached and requested to institute an immediate inquiry into this question, which is of vital importance to the Public Health, and of great consequence to the agricultural industry. 7. That the educational work of the great national societies for the prevention of tuberculosis is deserving of every encouragement and support. It is through their agency that a rational public opinion may be formed, the duties of public health officers made easier of performance, and such local and State legislation as may be requisite called into existence. 8. That this Congress is of opinion that a permanent International Committee should be appointed—(*a*) to collect evidence and report on the measures that have been adopted for the prevention of tuberculosis in different countries; (*b*) to publish a popular statement of these measures; (*c*) to keep and publish periodically a record of scientific research in relation to tuberculosis; (*d*) to consider and recommend measures of prevention. This Congress is further of opinion that all international and great national societies whose object is the prevention of tuberculosis should be invited to co-operate. 9. That, in the opinion of this Congress, overcrowding, defective ventilation, damp and general insanitary conditions in the houses of the working classes, diminish the chance of curing consumption, and aid in predisposing to and spreading the disease. 10. That the following question be submitted for the consideration of the next Congress on Tuberculosis:—The constitutional conditions of the individual which predispose to tuberculosis, and the means by which they may be modified. 11. That, while recognising the great importance of sanatoria in combating tuberculosis in all countries, the attention of Government should be directed to informing charitable and philanthropic individuals and societies of the necessity for anti-tubercular dispensaries as the best means of checking tubercular disease among the industrial and indigent classes.

## NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

### *"Tabloid" of Apomorphine Hydrochloride and Strychnin Hydrochloride (Hypodermic).*

THE use of apomorphine hydrochloride alone as an emetic has, in some cases, been followed by considerable depression, and even collapse. An attempt to overcome this objection has been made by the addition of strychnin hydrochloride. In order to obtain the full therapeutic benefit of a hypodermic injection of apomorphine, the employment of a fresh solution is essential. This may be effectively and economically prepared by the use of the "tabloid" of apomorphine hydrochloride and strychnin hydrochloride. The "tabloid" products are rapidly soluble, and of uniform activity; the combination providing an emetic which, it is hoped, will be free from depressive effect. As is well known; they contain only drugs of the highest purity in accurate doses. "Tabloid" (hypodermic), apomorphine hydrochloride, gr. $\frac{1}{10}$, with strychnin hydrochloride, gr. $\frac{1}{60}$, is issued by Messrs. Burroughs, Wellcome, & Company in bottles containing twelve.

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# PART I.

## ORIGINAL COMMUNICATIONS.

ART. XIII.—*The Ætiology of Tabes Dorsalis.* By GORDON M. HOLMES, M.B. Dubl.; Assistant to Professor Edinger in the Senckenberg Laboratorium, Frankfurt-am-Main.

FEW questions in neurology have given rise to so much discussion as the ætiology of tabes dorsalis—one of the commonest, as it is one of the most serious, of the chronic nervous diseases; and the large number of theories for its origin which have appeared during the last half century is but a true indication of the insufficiency or fallacy of most of them. But it is not hard to understand the difficulties which any theory must meet in attempting to supply a single and solitary cause for so complex and polymorphous a symptomatology as that which distinguishes tabes—of which two cases are seldom alike. It will be useful to mention first some of the more important of these hypotheses, and trace the gradual development of the recognition of the symptom-complex and its pathological substratum.

The claim of priority in discovering the disease undoubtedly belongs to Todd, who described in 1847 ataxy without muscular weakness, associated with lesion of the posterior columns of the spinal cord. Romberg's account followed four years later, but the disease was not generally recognised till after Duchenne's more detailed description of it in 1858. These observers found wasting or absence of the fibres of the posterior columns, with an increase or growth of the interstitial tissue, and consequently regarded tabes as a sclerosis or grey degeneration of these tracts, due probably to a chronic inflammation—a primary interstitial process.

The next step was made by von Leyden's monograph in 1863, where it was pointed out for the first time that the degeneration is primarily parenchymatous, affecting the centripetal neurons, while the interstitial change plays but a secondary *rôle*, depending on the growth of the neuroglia to fill up the place of the degenerated functional tissue. Von Leyden further described the seat of primary lesion in the posterior roots and the changes in the cord as due to the degeneration of those tracts which are composed of the direct prolongations of the root fibres. But although he treated the pathological anatomy thus fully, von Leyden then attributed this parenchymatous degeneration to no special cause.

Still later the question was raised whether the disease is a pure elective-systematic, as Flechsig and Strümpel maintain—*i.e.*, are special tracts of fibres, with special position, definite course, and definite functions, only attacked? or is it a radicular degeneration—that is, a segmental affection in which all fibres of the posterior roots are equally affected? Recent careful pathological examinations have shown that the first alternative cannot be accepted for all cases, for it has been found that often but parts of those systems into which Flechsig has subdivided the posterior columns are found degenerated, though frequently the degenerated tracts do correspond to those areas which are marked out by their successive periods of myelination, and it has been further urged that the electiveness of the sensory disturbances favours this view. On the other hand, we now know, through the researches of Schiefferdecker and others, how the intramedullary portions of the posterior root fibres are arranged in these systems, and that the degeneration corresponds to the spinal distribution of these centripetal protoneurons. The segmentary distribution of the sensory disturbances (Lähr, Hitzig), the frequent affection of the fibres of isolated roots, and the fact that the localisation and extension of the tabetic degeneration corresponds to the course of the root fibres in the posterior columns, place it beyond doubt that the degeneration is primarily radicular. All fibres of the posterior roots are, however, not affected equally or in mass, but those with specific functions—reflex, muscle-sense or sensory—often suffer simultaneously. So the second alternative must be also modified and the pathological process must be termed an elective radicular degeneration. The importance of this fact will be later pointed out.

A few theories have been recently brought forward which assume a primary interstitial instead of a primary parenchymatous change. Chief among these is that of Redlich and Obersteiner, who, finding in many cases of tabes meningitis on the posterior surface of the cord, sought to explain the degeneration as the result of the compression and strangulation of the posterior roots, where they enter the cord, by the thickened pia mater and the peripheral layer of the neuroglia, which they also found very dense and sclerosed. The medullary sheaths are at this point much thinner than at any other part of the fibre, and consequently they regard it as the least resistent point.

Such a theory would explain the degeneration of the exogenous sensory fibres of the cord, but subsequent investigations have failed to find this condition constant, and other cases of typical meningitis or meningo-myelitis are frequently seen unassociated with tabetic lesions. Even these two authors have modified their own views, recognising how inconstantly meningitis is associated with tabes.

Nageotte's theory is somewhat similar, as he would regard an interstitial neuritis of the posterior roots as the primary lesion, and the degeneration of the fibres as the result of compression and circulatory disturbances. But others have failed to substantiate this too.

The development of the neuron theory in the last decade has naturally led various authors to seek the cause of tabes in a primary lesion of the trophic centres of the degenerated fibres—that is, in the cells of the spinal ganglia. Marie was the first to expound this view, and it was at first apparently supported by the examination of these cells in a few cases, but such changes, if they do exist, have, at least in the majority of cases which have been examined, nothing characteristic, and are too slight to seriously affect the fibres; and the fact that a correspondingly severe degeneration of the peripheral sensory nerves, whose trophic centres are in these same cells, is never found, finally upsets this hypothesis. Any changes which may be found in the ganglia are more easily explained as the result of disturbed function due to the primary degeneration of the fibres.

And finally, all such theories as start with a local pathological change in the cord, posterior roots, or spinal ganglia, fail to explain many other symptoms of the disease—the occasional optic atrophy, paralysis of the different cranial nerves, &c.—which are so frequent. A few authors (Benedict, Borgherini) feel themselves driven to regard tabes as due to an organic predisposition—an inherent defective vitality or lowered durability of certain parts of the nervous system: a hypothesis which, at least as far as adult tabes is concerned, completely lacks proof.

The theory that the posterior column degeneration is due to defective blood supply is incapable of explaining its anatomical extension, nor is severe vascular disease recognised in the early cases which are examined. Further, experiments on the lower animals have shown that when the blood supply is deficient the grey matter and the endogenous tracts are the first to suffer.

One of the most important points is the relation of tabes to syphilis, which was first pointed out by Fournier in 1876, and was further developed by Gowers in England and Erb in Germany. Erb found in a very large number of cases of tabes that about 90 per cent. of them had been earlier infected with syphilis—that is, the percentage of syphilitics was in his material at least five times as high in tabes as in all other nervous diseases. Gowers' percentage is somewhat lower, between 70 and 80 per cent., but certainly high enough to exclude the probability of a mere casual relationship between the two diseases. The figures of other authorities, even though a very large amount of material was especially examined with this point in view, are very divergent—a fact easy to understand if we remember that there is no constant single criterion by which the presence of earlier syphilis can be affirmed beyond doubt, so that much is left to the observation and opinion of each observer. Although Erb's figures are as high as above quoted, von Leyden finds the percentage of syphilitics in his tabetic material hardly higher than in the remaining diseases of the nervous system—*i.e.*, about 30 per cent. The discussion is still unended, but two points stand prominently forward—first, that the later observers have almost unanimously found the number of syphilitic tabetics extremely high; and, secondly, that from those classes where the most reliable information of infection can be obtained, the evidence is strongly in favour of a close relationship between the two diseases.

But tabes is certainly not a syphilitic disease as the term is usually applied, because (1) the anatomical substratum has not the characters of a syphilitic change; (2) anti-syphilitic treatment is unanimously admitted to have little influence on the course of the disease, and may do positive harm; (3) tabes generally occurs many years after syphilitic infection, and is seldom associated with true syphilitic processes; (4) even the strongest supporters of the dependence of tabes on earlier syphilitic infection must admit that cases occur in which syphilis may be certainly excluded. Further may be mentioned the rarity of tabes among prostitutes, who have almost all had syphilis, and among people and tribes where syphilis is extremely common, as in Japan (Grimm), Bosnia (Glück), and among the coloured population of the United States (Burr, Trennen).

Thus the statistics above quoted only raise fresh difficulties, which many hypotheses in turn have been brought forward to solve. Fournier originally described tabes as a metasyphilitic disease—a late manifestation of the syphilitic virus on the nervous system—and this view was till lately strongly supported. Others (Strümpel, Hitzig) has postulated a toxin formed in the organism, generally the result of syphilitic infection, with a special affinity to the nerve fibres which are found degenerated in tabes, or to which these tracts are especially susceptible. We are undoubtedly acquainted with poisons which possess such an elective action on certain parts of the nervous system—tetanus, rabies, strychnin, perhaps also ergotin, and the toxic substance in diseased maize—but we have no direct proof that such a toxin exists in the body of a tabetic, and in the cited cases the action is rapid, and the symptoms they produce are quite unlike the protracted and progressive picture of tabes. Undoubtedly some toxins, as that of syphilis, may lie latent in the body for long periods, and long after infection cause specific lesions, and thus be comparable to the assumed toxin of tabes; but it is difficult to imagine such a virus in the organism for years without producing any other symptoms, and it is improbable that any toxin should possess such a severely elective action as to attack certain fibres of a peripheral nerve and leave intact others similar in anatomical construction and chemical composition, but with different functions. The radicular distribution of the disease is another point of difficulty in accepting a hypothetical toxic causation for it. And, further, the presence of such a toxin is extremely inconsistent in the syphilitic infection, for tabes is a rare sequel of syphilis, and may, in some districts where venereal diseases are extremely common, never be found.

Von Leyden has recently expressed the opinion that the primary lesion may be the peripheral neuritis which is frequently found associated with the spinal degeneration. He has adopted this view because the peripheral nerves are the most exposed to the various influences of cold and wetting, which he looks upon as the chief ætiological factors in the production of tabes. The loss of stimuli to the spinal ganglia resulting from such a neuritis would, according to him, lower their trophic influence on the posterior roots, which would be then very liable to degenerate. But the occurrence of this peripheral neuritis is inconstant, and the motor suffer equally with the sensory nerves. The influence of cold and wetting on the course of the disease has been recognised by almost every clinician, but it has not been rated so high. Their importance from another point of view will be pointed out later. Trauma and sexual excesses are frequently mentioned as ætiological factors, but modern views attach little importance to them. The latter, as Trousseau first pointed out, may, in the early stages of the disease, be an effect rather than the cause.

So unsatisfactory are all these hypotheses to explain the complex symptomatology of tabes, that one authority (Obersteiner), after reviewing them, expressed the opinion that it is necessary to admit that a number of different but co-ordinated processes work together, variable in their intensity, and only in part to be traced to a common cause.

A few years ago Edinger opened up new ground and offered an ingenious hypothesis for the ætiology of tabes by his Ersatz-theorie—compensation theory. Recognising the numerous and various causes to which tabes is attributed, he asks, How is it possible that such a definite symptom-complex can be produced by so many different causes, and that any of these may at one time produce this, and again another quite different disease, as textbooks teach us? His explanation starts with the now well-recognised theory of Weigert and Roux, that the various constituents of a tissue are normally in a state of equilibrium, so correlated one to the other that no cell can disappear without the surrounding tissue growing to fill its place, and when one constituent becomes weaker or less resistant, the energy of growth of its neighbours repress it still further. Thus Weigert regards liver cirrhosis or chronic nephritis as a primary degeneration of the parenchymatous tissue, with a secondary increase of the interstitial, and the gliosis in the spinal cord of an old case of hemiplegia originates in the same way, and when a cell or fibre, or even a whole neuron, becomes so weak that it is unable to hold in check the tendency to growth of the neighbouring tissue, there we must expect to find, if the theory be correct, exactly the same process.

It is Weigert's special service that he showed that the cause of such a lessened resistance of any part of an organism need not be attributed to any unknown influence or any vital property of the cell. He pointed to the well-known physiological fact that function requires consumption of part of the active tissue, and that in normal conditions this destructive process is compensated by a sufficient supply of suitable nutrition, so that the production of living substance is constant, and if this does not take place the normal equilibrium of the parts is disturbed—that is, by the disturbance of their metabolic equilibrium, and a progressive degeneration must be the result. Edinger has applied this view to the nervous system, for here, as elsewhere, destructive and constructive metabolic changes are constantly associated with functional activity of the cells or fibres. The disappearance of the tigroid substance in a working ganglion cell may be the morphological expression of the first part of this process. Thus he assumes that if the supply of nutrition be deficient, or if, though it be normal, excessive work be demanded from the cell—that is, if the normal relation between combustion and repair is disturbed by either relative or absolute supra-function, the energy of growth of the resting tissue will bring about a degeneration of the less resistant active parts, and this result would more easily occur if both possibilities combine, and excessive work be associated with a state of nutritional deficiency.

As clinical examples of this he cites the hammer-palsy of smiths, the atrophic paralysis of the forearm muscles of drummer-boys, and numerous other examples of occupation palsy, which, according to him, occur most frequently, or only, in under-nourished subjects.

But should the proof of the accuracy of the Weigert-Edinger theory for the whole nervous system succeed, it is necessary that the possibility be proved that certain tracts under normal conditions are worked more than others, and that these tracts degenerate when stress, in the form of overwork, either relative or absolute, is associated with a disturbance of the general metabolism with deficient nutrition. There are undoubtedly a small number of nerves which are constantly or very frequently at work, or at least much more constantly in action, than any of the other nerves of the body. These are the sensory nerves from the muscles which take an important part in the regulation of muscular contraction, and are constantly transmitting those stimuli by which we can become aware of the condition of our muscular system or the position of our limbs. These nerves are almost constantly at work, and if the hypothesis be right these must suffer, and their degeneration is clinically expressed by *loss of muscular tone and the deep reflexes*, with ill-directed movements without loss of motor power—*ataxy.*

Secondly, the pure sensory nerves which are constantly transmitting sensations from the skin and mucous membranes to the central nervous system. They are never idle, even though we may not be conscious of their work, and consequently they would be liable to suffer in our hypothetical conditions, and produce the clinical symptoms of *sensory disturbance—anæsthesia,* &c. And these disturbances of sensation would naturally be found in those regions of the body where these nerves are most irritated by the pressure of the clothes or other means; and in tabes we find the scattered, and often irregular, patches of anæsthesia most constant on the soles of the feet or round the waist.

In the third place, the eyes would suffer, and, above all, the nerves of the constrictor iris, which are so constantly active. No glance from light to shade, from the wall to the window, from a page to the lamp flame, can occur without causing a movement of the pupil. The nerve fibres which bring about this reflex contraction of the iris to light must, when we are awake, be almost constantly active, in contrast to the reflex arc for accommodation which is relatively seldom at work. Thus in the assumed condition we might expect degeneration of the former fibres while the latter remain normal—a phenomenon clinically known as *Argyll-Robertson's* sign.

The nerves of the external ocular muscles would also be liable to suffer and produce *ocular paralysis*, and especially *ptosis*. And the optic nerves, if relatively overworked, might easily suffer the same fate, giving us a picture of *optic atrophy*.

The functions of the bladder and rectum, too, would be liable to disturbance. The reflex arcs necessary for the normal accomplishment of their functions may be interrupted and *retention* or *incontinence* result. If Edinger's theory is right, the motor nerves would be also affected if they were overworked when the nervous system was in a state of nutritional deficiency, and present the clinical picture of an *atrophic paralysis*. In tabes such a paralysis is frequently found in the peroneal region or in other nerve-areas which may be subjected to over-exertion.

Such symptoms as Edinger has deductively traced to the stress of overwork or an ill-nourished nervous system almost complete the typical picture of tabes dorsalis—ataxy, loss of muscular tone and deep reflexes, disturbances of sensation, the Argyll-Robertson phenomenon, occasional optic atrophy and ocular paralysis, and disturbances of the functions of the bladder and rectum; and if the various points are logically correct his theory is an incomparably fuller explanation of the localisation and extension of the pathological changes in tabes than has yet been offered, and renders intelligible many phenomena clinically well-recognised but hitherto unexplained.

But not satisfied with a hypothesis resting merely on clinical facts, Edinger sought to establish his theory more fully by suitable experiments. Voss had already attempted to produce such degenerations in the spinal cord as are frequently found in the human subject in pernicious anæmia, by injection of pyrodin into animals, which causes a severe anæmic condition. He failed, however, but Edinger started where he left off. Though Voss, he thought, failed to produce spinal degeneration in ill-nourished animals, which he carefully nursed to keep alive, might not a similar experiment succeed if the nervous system were in addition subjected to the stress of overwork. To test this he also administered pyrodin to a number of rats, and when they fell into the resulting marasmic condition made some of them do excessive work by various means, and subsequent examination of the cords of those which had been worked to over-exertion presented degenerations closely resembling those of tabes, but the cords of those which were kept at rest appeared quite normal.

From what has been already written it will be apparent that Edinger's theory postulates the action of predisposing agents by which the nutrition or power of repair in the nervous system is affected; and, secondly, that on the soil suitably prepared by such noxious agents, function, normal or excessive, sows the symptom-complex; and no stronger confirmatory point for the correctness of this view could be expected than Edinger himself has furnished by this modification of Voss' experiment.

But do men get tabes when they live under similar conditions? The spinal changes found in some cases of severe anæmia, or occasionally associated with diabetes, or in the marasmic states brought about by the poisons ergotin or diseased maize, have undoubtedly a close resemblance to the tabetic lesions, differing chiefly in their more rapid course and less regular localisation.

Further observations on the effect of work or rest in these conditions are not at present existent, but should form the subject of an interesting investigation; why such spinal degeneration is sometimes present, sometimes absent, in pernicious anæmia, for instance, is not yet answered. If it be due merely to the action of a toxin, why it so frequently fails is inexplicable; perhaps here, too, function is the direct cause.

Few objections have been raised to Edinger's theory, but probably the most important of these was Schultze's argument that if the localisation of the disease be determined by function one would expect to most constantly find degeneration of the anterior cornual cells and motor nerves, with paralysis and muscular atrophy. Edinger met this objection by the hypothesis that the motor nerves have a greater power of resistance, or are better supplied with nourishment than the sensory. But a hypothesis in support of a theory is not satisfactory, and it appears to me that another explanation is more plausible. Let us take a glance at the simplest nervous mechanism. We need only consider the peripheral neurons afferent and efferent, and the corresponding pair of upper or central neurons—that is, the pyramidal tracts and the secondary sensory fibres. On which of these systems does the greatest stress fall? The pyramidal tracts are only a relatively short time at work, and have abundant time to compensate any of their material which was used up. The peripheral motor neurons may be kept in action by stimuli from at least two different systems—an interrupted activity, the result of stimuli from the pyramidal tracts, and a constant activity, represented by muscular tone, dependent on impulses carried to them by the corresponding peripheral afferent nerves. Thus the peripheral motor nerve which is normally capable of responding to two sets of stimuli, when exhausted, has abundant opportunity to recoup during the periods when it is not at the service of voluntary impulses. But with the peripheral sensory neurons, and more especially the afferent muscular fibres, it is different. Their activity is constant and unremittent. They transmit not only the stimuli from the periphery of which we are, or can become, conscious, but a constant and unremittent stream of impulses courses up their fibres, keeping our motor mechanism informed of the position of our limbs, and completing the reflex arc which extends from skin to muscle. These fibres are never out of action, and never have a moment of even relative rest to refit and repair the katabolic changes correlative to their activity. If, then, nutrition were generally defective, these fibres would be much more liable to suffer than the motor peripheral nerves. But peripheral paralysis with muscular atrophy is frequently associated with tabes dorsalis, nor can anyone who has seen the excessive force and waste of energy with which an ataxic patient performs a wished-for act be surprised that it should be so. On the other hand, such changes are less liable to occur when the corresponding sensory nerves have degenerated, for though the work executed at the call of voluntary impulses may be excessive, the motor nerves are no longer exposed to the stress of maintaining muscular tone in response to afferent impulses.

If Edinger's theory be accepted, a further light can be thrown on the tabes-syphilis question. The noxious influence of syphilis on all the tissues of the body is well-recognised, while the vascular changes induced by it may have an additional influence by reducing the necessary amount of the nutrition carried by the blood, disturbing thus the normal relation between the work done and the necessary conpensation of the material consumed. And also, while recognising the high proportion of tabetics who have been earlier syphilitic, we escape the difficulty of having to believe that everyone who has tabes has had syphilis—a fact which no reliable statistics have yet proved; and by it we would have an explanation of the fact that, as most clinicians have observed, a vigorous anti-syphilitic treatment, even though the patient was syphilitic, only does harm and hastens the progress of the disease, which is easy to understand, as mercury has a depressing effect on the system, and may thus act as an additional predisposing agent. In the same way the frequently observed exacerbation of symptoms after infectious diseases, influenza, or excesses of any sort, becomes intelligible.

In it, too, we are enabled to recognise a single unitary ætiological factor for the disease—*i.e.*, undue stress associated with disturbed metabolism; and those causes to which clinicians have so frequently ascribed it—syphilis, cold and wetting, trauma, alcoholic and sexual excesses—can each be recognised as a predisposing cause, which acts by disturbing the nutrition of the nervous unit.

The chief clinical symptoms of tabes undoubtedly, in the majority of cases, first appear in the lower extremities, and it is quite as far beyond doubt that these limbs are generally more subjected to the stress of over-work than the arms. But I have been able to collect from the literature a few cases of the rare condition of cervical tabes, and it is noteworthy that where the occupation of the patient was mentioned there existed much support for the belief that the arms were more worked than the legs. Such cases are reported in carpenters, seamstresses, and in Mott's case, where a policeman, in whom the chief stress would naturally be expected to fall on the legs, turned out to be a mounted officer, and the disease began in the arm in which he held the reins. Almost all authors point out the danger of over-exertion, and it is particularly interesting that some have described the greater frequency of tabes after campaigns.

I would venture to point out a few other symptoms of tabes which, it seems to me, are most easily intelligible with the help of Edinger's theory. It has already been shown that tabes is best regarded as an elective radicular degeneration—that is, that the fibres of the posterior roots generally degenerate not in mass, but in groups according to function. This has been a great difficulty to all theories which have sought to attribute the degeneration to local causes, or even to toxic influences, but that it should be so is almost vital to Edinger's theory. "Function creates the symptom-complex," he says, and if the nerves for muscle-sense, common sensibility, or any of its forms are unequally active, the degeneration, if this hypothesis is correct, will not equally involve all forms, in the early stages of the disease at least. Particularly instructive in this relation is the difference in the dis-association of sensations in tabes and syringomyelia. In the latter disease the senses of pain and temperature are constantly lost together, the result of the anatomical localisation of the pathological process, but in tabes no such constant association of two forms of sensibility occurs, for stress picks out the tracts it destroys regardless of their anatomical position.

The progressive character of tabes in the majority of cases, the pauses or the sudden increases the pathological process makes in others, are also quite intelligible when viewed from this standpoint. In the first class of cases it is not necessary that the predisposing factors should be continually present, but the stress of excessive function on the fibres which, in addition to performing their own work, take on the task of those which have degenerated—and that they do so to a certain extent is placed beyond doubt by the results of Fränkel's exercises—may disturb their metabolic equilibrium, even though the supply of nutrition be normal. On the other hand, according as they are spared from such stress, or unduly exposed to it, or as the nutrition of the nervous elements becomes more favourable, or suddenly poorer, the clinical symptoms may remain unprogressive or experience severe exacerbations.

Further, no theory has yet attempted to explain the well-known fact that in those cases where optic atrophy supervenes any ataxy which may have been present does not tend to increase, and may even disappear, and if it had not yet developed will not appear. This fact is the more noteworthy, since in ordinary cases the inco-ordination is greatly inrceased in the dark, or when the patient is by any means temporarily deprived of the aid of the sense of sight. But it is evident that an adult who has become blind is not in a position to perform much work or exert his activities in any direction, and thus his nervous system is placed in a condition of relative rest, and further spared from that stress by which the ataxy and other motor symptoms are produced.

An ill-nourished syphilitic seamstress in whom inco-ordination of the arms was the earliest sign of the disease, and who afterwards became blind and lay for years in an unprogressive state, is a good example. Absolute amaurosis, sensory disturbance, and lancinating pains, with loss of the knee-jerks, were the only symptoms she presented.

Hitherto unexplained also is the relation of tabes to sex; for the disease is universally admitted to be much commoner in the male than in the female. Gowers places the proportion at ten to one, Erb as high as twenty to one. Edinger attributed this disproportion to the fact that men are more exposed to those influences which he classes in the ætiology of the disease. Some remarkable statistics have recently been published which show how justified this conclusion was. Mendel found tabes less than three times as frequent in males than in females among the patients of his Poliklinik, who naturally belong to the lower social classes, but in his private practice he had twenty-five male tabetics to one female. This is no isolated observation, but has been already supported by a number of other observers. Erb's tabes statistics are taken mostly from his private patients, and probably Gowers' figures also chiefly refer to his private practice among the higher classes. That this disproportion is not due to the greater frequency of syphilis among women of the lower classes must be admitted, since, as above stated, tabes is rare among prostitutes, and seldom seen among some races where syphilis is very common. Another explanation is needed, and none seems less objectionable than Edinger's theory. Women of the higher and middle classes who compose a neurologist's private practice are not exposed to those influences which are the direct cause of tabes, nor are the frequently luxuriously living prostitutes, but the nervous systems of women of the lower classes, and from the slums of the cities, existing frequently on an insufficient amount of food, and not less frequently anæmic, or broken down with child-bearing, often syphilitic and fully exposed to all the wear and tear of life, are very liable to succumb to the united forces of metabolic deficiency and undue stress, so that it is not to be wondered at that they should suffer almost as frequently as their male relatives from tabes. So, too, perhaps, may be explained the fact that tabes does not develop on the so frequently found syphilitic ground among the southern and semi-oriental races, for neither their work nor manner of living is likely to expose them to the danger of even relative over-exertion.

A further point which remains is the limitation of the pathological process to the intramedullary portions of the sensory protoneurons, although their peripheral parts are exposed to the same stress. The explanation may lie in one or all of the facts that—(1) The peripheral nerves are provided with an additional sheath which may help to save them, and they are not embedded in a compact interstitial tissue like the glia, where, according to the Weigert-Roux hypothesis, any weakness sets up a vicious circle. We know that spinal fibres cannot regenerate like those of the peripheral nerves. (2) The least resistant point of the neuron is probably at its point of entrance into the cord, for here the myelin sheath is constricted, or even absent. If the degeneration starts here, the rest of the fibre, which is separated from the spinal ganglion, must also degenerate. (Redlich's theory). (3) Marie has drawn attention to the fact that each axis cylinder consists of a number of primitive fibrils, and after the posterior root enters the cord collaterals leave it, each of which contains only a proportion of the fibrils. The integrity of the myelin sheath depends on the trophic influence of the axis cylinder, so that if a number of fibrils atrophy, the collaterals, which contain only a small number, will degenerate much more easily than the extra-medullary roots, where a sufficient number of fibrils may remain to preserve the medullary sheath. We have seen above that the collaterals are the first fibres in the posterior columns to degenerate.

And, if this theory for the origin of tabes can be accepted, it would possess the great advantage that it would place in the hands of the physician valuable indications for treatment, prophylactic and preventive, if not curative, for it is impossible to conceive a remedy which could replace the lowly organised interstitial tissue by highly differentiated nerve fibres. The main point in the treatment would be rest and guarding the patient against over-exertion in any form, and in any way possible strengthening the power of resistance of the nervous system. Edinger has already published very favourable results from this form of treatment from his large practice. For years he has never seen incontinence of urine among the patients whom he orders to regularly empty their bladders, or any considerable increase of ataxy when he keeps his patients at rest. I am indebted to him for the information that his experience during the few years since his last publication fully confirm the importance of rest in preventing the full development of the disease in early cases, or checking its course in the further advanced stages. This form of treatment may seem at variance with the successful results of Fränkel's treatment by regulated exercises, but I believe everyone who has used the latter method has recognised the danger of excess, and its chief advocates warn against a too vigorous course, or continuing it till the patient is tired. Finally, the results which have attended this method of treatment are a strong argument in favour of the theory.

Edinger further pointed out that the connection between, and the frequent association of, tabes with general paralysis of the insane can easily be understood if his theory be accepted, and the relation of both to syphilis. When the higher cortical centres, which represent the physical sphere, are subjected to a relative excess of physical activity, the latter disease results. The fact that numerous authors (Möbius, Raymond, Mott, and others) regard both symptom-complexes as manifestations of one and the same disease, is interesting in this connection.

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## ART. XIV.—*Modern Progress in Surgery.*[a]

By WILLIAM TAYLOR, F.R.C.S.I.; Surgeon to the Meath Hospital and County Dublin Infirmary; Surgeon to Cork-street Hospital; Demonstrator of Anatomy, Royal College of Surgeons in Ireland.

IN accordance with the time-honoured custom in this institution a member of the medical staff is entrusted with the duty of inaugurating the session. Through the kindness of my colleagues it has fallen to my lot to be that member to-day, consequently my first duty is to thank them for the honour thus conferred upon me.

At first I was disposed to look upon the honour of being selected as the inaugural lecturer of the 149th session of this hospital as an unenviable one, but on consideration I am inclined to think that, to place one so young in such a responsible position—a position filled in former days by so many great men, whose names in Irish medicine and surgery are household words amongst you, men not only renowned in their profession, but distinguished in the art of oratory—is an honour deserving of my respectful thanks. As there must then be an absence of that literary finish and polish so characteristic of some of the addresses I have listened to in this place, I must only claim the indulgence of my audience for my first attempt. Meanwhile, permit me, on behalf of my colleagues as well as on my own behalf, to extend to you a hearty welcome. On former occasions, I understand, inaugural lectures were devoted to the students—advice, some good and some indifferent, being given as to their course of study. But on recent occasions lecturers have been inclined to give up this method of introducing our teaching session, and have devoted their discourses to subjects of more interest to those who, though not members of our profession, take an interest in our hospital and work, and honour us with their presence on occasions like these. The lecturer, in fact, believed that advice unasked, and thus proffered to students about to resume their duties, or to those who take their stand for the first time on the threshold of a profession through whose portals many enter, but few with a full realisation of the responsibility they incur, was so much time wasted. If, then, I were to direct your attention for a few moments to some of the giant strides made in surgical therapeutics, I might later on be excused for giving you some little advice which might be profitably followed during your student days. At any rate I will run the risk of incurring your reproach both for what may be termed presumption and perhaps for wearying you with the repetition of an oft-told tale. Let us just for a moment glance at the position of the surgery of the brain.

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[a] An Address delivered at the opening of the 149th Session of the Meath Hospital, on Monday, October 14, 1901.

Some few years ago this was a part of the body forbidden to the surgeon's knife, owing chiefly to defective knowledge of its functions, and I may say to almost total ignorance of cerebral localisation. Thanks to the indefatigable industry and perseverance of Ferrier, MacEwen, Horsley, and many others, this ignorance has been replaced by a fairly accurate knowledge of function and localisation, with the result that the surgeon now no longer hesitates to open the cranium and explore its contents.

Surgical affections, such as tumours and abscess, are now early recognised, accurately localised, and promptly treated with almost the same precision and accuracy as tumours or abscesses in any other part of the body, and that, too, with a large measure of success.

Nor are tumours or abscesses the only conditions for which the cranial cavity is explored, for it is fairly common to see the operation of trephining performed for injury causing fracture and hæmorrhage, leading to compression of the brain—a condition almost certainly fatal if left untreated.

Epilepsy, that dreaded condition, especially when due to injury, may also be radically dealt with by operation.

To such an extent have the risks of operation diminished that exploration of the cranial cavity in doubtful cases, rather than leave the patient to certain death, is not only suggested, but actually practised with excellent results by surgeons both at home and abroad.

Many brilliant results have been achieved by operative interference in cases of gunshot wounds of the skull on the battle-fields in South Africa.

You may have heard some years ago that craniectomy was the procedure recommended and practised for microcephalic idiocy, but rightly this operation had only a short existence. In these cases the whole central nervous system is developmentally defective, and no operation of taking out slices of the bones of the skull could possibly remedy that defect.

There seems to me to be but one condition left in connection with the brain, which may in the distant future, when its pathology is known, become amenable to surgical interference. I allude to insanity.

Here I may mention that although the results of injuries to the spinal canal and its contents are not benefited to the same extent by operative interference, still surgery can point with pardonable pride to brilliant achievements in some cases of fracture-dislocation, and tumours causing pressure on the spinal cord—aye, and even in some cases of Pott's caries.

Let us now pass to the thoracic cavity.

It is not so many years since the radical treatment of empyema became thoroughly established, and to König must be given a good deal of the credit for having so persistently urged the necessity of resection of a portion of a rib as an essential part of every radical operation for empyema.

If pus is present in the pleural cavity to any extent, unless operation is undertaken it can be recovered from only by spontaneously bursting externally or into a bronchial tube, and then expectorated—a by no means savoury way of draining a pus sac. In very old-standing cases the procedure required is the formidable one of resection of the entire bony wall of the chest.

The proposal has been made, and actually carried out in a few cases, to resect the affected apex of the lung in some cases of that disease, which is at present engaging the attention of not only the whole medical scientific world, but the public at large—viz., phthisis. Such a surgical procedure seems to me unwarrantable from the results. Cavities in the lung in phthisis and bronchiectasis have been opened and drained with some measure of success in the latter condition.

Abscess of the lung and gangrene of a localised nature have been successfully dealt with by surgery.

The pericardium is frequently opened now for the drainage of purulent effusions, which in former days were left untreated to terminate in all cases fatally.

The present position of surgery in these cases, so far as I can gather from the literature of the subject, is this:—Out of 51 cases operated upon for purulent pericardial effusion 20 recovered—that is 39·2 per cent. of cures.

Nor does surgery stop with the sac in which the heart lies, for on no less than six occasions the heart itself has been sutured for wounds in man, two of which terminated successfully. Rehn sutured a wound six-tenths of an inch in the right ventricle with three silk sutures, while Parozani sutured a wound eight-tenths of an inch at the apex with four sutures. These were the two recoveries. Giordani, another surgeon, sutured a wound eight-tenths of an inch in the left auricle with four sutures, and found the wound in the process of cicatrization at the autopsy, death having resulted on the 19th day from empyema.

Surely these results of surgical interference in connection with the heart and the serous sac in which it lies must be looked upon as brilliant.

It is, however, to the abdomen we must turn for the greatest advances of all in surgery within recent years. No region of the abdomen, no viscus therein, can be claimed as exempt from operative interference.

The stomach has been not only opened for the removal of foreign bodies, to supply nutrition in cases of œsophageal stenosis, or to remedy the various other conditions of a surgical nature that are amenable to interference through direct incision of the stomach, but also partially resected, and that with considerable success, too, for the relief of gastric cancer. Nay, more, for that same fell disease, when more extensive, the entire stomach has been successfully removed.

The first case of complete gastrectomy was successfully accomplished in September, 1897, by Carl Schlatter, of Zürich. Connor, of Cincinnati, effected the complete removal as long ago as 1883, but the operation was promptly hushed up on account of the death of the patient, and it is only since Schlatter's success that other similar operations have been performed. As yet the number of cases in which the operation of complete gastrectomy was performed is too small (only 12) from which to draw any deduction. Gastric ulcer, with all its complications and sequelæ, has within recent years become an important source of surgical interference.

Operation has now been proposed, and has on many occasions been successfully performed, for copious and repeated hæmorrhages from the ulcer.

Operative procedures are now of frequent, one might almost say of daily, occurrence for others of its complications and sequelæ, such as the loosening of adhesions (gastrolysis), or for the relief of pyloric stenosis (pyloroplasty, or gastro-jejunostomy), for hour-glass contraction (gastroplasty or gastro-gastrostomy), while gastro-enterostomy is frequently performed for the cure of chronic ulcers that resist other lines of treatment. Perforation, too, has been treated, and with great success—the only essential to success in this latter condition being early diagnosis and rapidity of operation, provided, of course, the surgeon be one experienced in abdominal surgery. Formerly almost all cases of perforation ended fatally, while now, by timely operation, 70 per cent. at least should be saved. In fact, Keen gives a mortality of only 16·6 per cent. when operation is performed within 12 hours, while for operations performed between 12 and 24 hours subsequent to perforation the mortality is more than doubled.

Perforation of the intestine in typhoid fever, formerly looked upon as absolutely hopeless, now shows from 25 per cent. to 33 per cent. of recoveries after timely operative interference. Indeed, in Professor Osler's clinic during the past three years out of 11 cases operated upon five were saved—a percentage of recoveries of 45·4. This result is attributed to the early stage at which the operation was done. The only contra-indication to operative interference in these cases is extreme collapse.

Resection of the intestine for injury, tumour, disease or gangrene is of almost daily occurrence.

A few years ago the infant mortality from acute intussusception was something appalling. Now, in my opinion, there is nothing more successful than the treatment of this condition by laparotomy, provided, of course, the case be seen early and operated upon by a skilled surgeon before the infant is exhausted from pain and vomiting or poisoned by septic absorption from the intestines, and before adhesions have formed.

Operations for appendicitis have become, I might almost say, a fashionable craze. Still I am of the opinion that the earlier we operate for this very common condition the less the risk and the fewer patients will die from general septic peritonitis. There is one condition in connection with the alimentary tract that still shows an appalling mortality. I allude to acute intestinal obstruction. This seems to me to be due to the pernicious habit of meddlesome medication and delay until the patient is poisoned by the absorption of septic matter from his intestines, and thus rendered incapable of withstanding any operation.

The sooner physicians and surgeons recognise that purgation and delay mean death, and that the only hope of recovery lies in early operation, the sooner this mortality will diminish.

The kidney has frequently been successfully removed, and many of you have often seen this organ the subject of operations for the removal of calculi, &c.; but at the present time conservatism comes into sway and portions only are excised in certain conditions, for which a few years ago the whole organ would have been sacrificed.

Recently Mr. Reginald Harrison has been advocating the exposure through the loin and incision of the kidney for the relief of increased renal tension and vascularity. In other words, he advocates operation, and shows from his own practical experience very good results therefrom in certain cases of Bright's disease arising from scarlatina and cold.

The gall bladder has likewise been the subject of great surgical achievements in recent years—the pioneer in this respect being Mr. Mayo Robson, of Leeds.

Operations on the liver for hydatids and abscess were of common occurrence, but during the past decade it has been attacked and large portions removed for simple tumours, for cancer extending from the gall bladder, as well as in a few cases of primary malignant growth when of a localised nature and early recognised.

In rupture from injury prompt operative action has diminished the rate of mortality from 85 per cent. to 55 per cent. In gunshot wounds the mortality has been reduced from 45 per cent. to 30 per cent., and in stab wounds from 36 per cent. to 25 per cent.

In this connection I should mention that surgery is now invoked by the physician in cases of ascites due to cirrhosis of the liver rapidly recurring in spite of treatment, the object being that of promoting adhesions between the omentum and abdominal wall and between the upper surface of the liver and abdominal wall, and thus forming a new collateral circulation.

The spleen, too, has been anchored in its proper place in case of great mobility, while its conservative surgery in case of injury is now pretty well established, and many cases of complete removal with success have been recorded.

Nor has the surgery of the limbs been neglected while these advances were being made in connection with the body cavities.

Conservatism has largely replaced amputation.

Antiseptic and aseptic surgery have frequently succeeded in dealing successfully with complications that hitherto were considered ample to justify a mutilating operation such as an amputation is.

All other things being equal, the surgeon who has the lowest amputation statistics is the one who is most useful and successful.

He who can save a limb is deserving of more credit than the man who can remove it by a brilliant operation, performed with lightning rapidity.

Time prevents me entering more fully into the achievements of surgery of the present day, but what I have mentioned will suffice, I hope, to rouse your enthusiasm in connection with the work of the profession into which you have elected to enter.

The study of medicine has been divided into two divisions—the first relating to practical usefulness, the second the scientific part.

The former is that which you will chiefly learn and study within these walls, while it is upon this part of your profession most of you will have to depend for the wherewithal upon which to subsist.

The second furnishes you with the desire for investigating new phenomena, and establishing on a scientific basis such phenomena as are not already so founded.

Surely in either of these you will have sufficient motive to work.

Do not imagine from what I have said of the great advances of surgery during the past few years that finality has been reached.

Let me mention to you one subject in which the public are intensely interested, and one which we see more of now than formerly—this increase may be only apparent owing to more accurate diagnosis—a subject the cause of which, in spite of all the observation and investigation which have been expended upon it, is still obscure, and consequently the treatment of which, until the cause is definitely settled, cannot be placed on a more scientific basis than with our present knowledge it already rests upon. The malady to which I allude is cancer—a word that conveys tremendous significance to the public—a word that generally heralds to the unhappy sufferer his death knell, an extensive and often a dangerous operation alone giving him or her a small hope of recovery without recurrence, and that only when the operation is performed at the earliest stage of the disease. No sphere of life is exempt from the ravages of this malady. It is no respecter of persons, from a ruler to his humblest subject. For him who places the causative factor beyond dispute, and establishes a cure, which it is quite possible may be accomplished by other means than the use of the knife, I may safely predict a place amongst the greatest discoverers and benefactors of mankind the world has ever known. Scientific fame, social distinctions, and wealth will all be heaped upon him.

To acquire a practical knowledge of your profession a fair knowledge of anatomy and physiology with their ancillary subjects will be necessary. Then, and then only, will you be in a position to study injuries and diseases and their immediate and remote results as exemplified in this and kindred institutions.

From the moment you enter the wards or dispensary train your eyes, ears, and fingers—three of your five gateways of knowledge. You must then learn to draw deductions from the information thus acquired, founding these deductions on your anatomical and physiological knowledge, and thus make your diagnosis. This ability to make a correct diagnosis is the essential difference between an accomplished physician or surgeon and a quack, consequently, unless you can learn to make correct diagnoses, your treatment must be mainly quackery.

After this follows the prognosis, to make which with anything approaching accuracy can be done only by knowing the different courses the disease may take, by experience acquired by previous accurate observation of similar cases, and by a careful study of the constitution of your patient.

In an introductory address, delivered here in 1887 by the late Dr. Arthur Wynne Foot, he took as his text on that occasion the three words—"Industry, Energy, and Perseverance." Any one of these he advised his hearers to take and make it mentally his watchword and it would prove an amulet or talisman against idleness, waste of time, slothfulness, and all the snares and toils which beset students, and perhaps more especially a student of medicine.

Lord Lytton has well said:—"A man will always be eminent according to the vigilance with which he observes and the acuteness with which he inquires." "To this," he says, "must be added perseverance." "I am no believer in genius without labour, but I do believe," he says, "that labour judiciously and continuously applied becomes genius in itself."

Dr. Arnold has said the difference between one boy and another was not so much in talent as in energy. "Perseverance is energy."

Perseverance then you will find, if you look around and inquire, is the characteristic of all those great men who have attained eminence, whether as statesmen, military or naval, professional or mercantile. Ask Lord Roberts to what he attributes his success as our greatest military general, and he will tell you it is to a "tireless attention to minutiæ, the undismayed pursuit and study of an idea and all its developments." Ask Lord Lister—one of the greatest benefactors of the race that ever lived—to what he attributes his success in the discovery of antiseptics—a discovery that has so revolutionised surgery, and saved countless lives all over the world—and he will tell you it is to perseverance. What was said by Lord Lytton well nigh half a century ago is no less true to-day.

Dr. Foot, in the address already alluded to, said:— "There is no funeral so sad to follow as the funeral of our own youth, which we have been pampering on selfish or ignoble aims to the neglect of good and wholesome food."

Study then, I implore of you, while yet you have time and opportunity, for every hour and every day you spend in idleness will rise up and confront you with a demand for payment from you of ceaseless yet unavailing regrets. Try and fill your minds with information which will enable you, when necessity and emergencies demand it, to deal effectively and scientifically with the problem before you—a problem which in many cases brooks of no delay, for it is that of life or death. What, then, will be the penalty of your mistakes or ignorance? For those who trusted their beloved ones to you it will be broken hearts and empty homes. For you a ruined career.

"'Tis now the summer of your youth."

Youth, it is well said, is the period by far the best fitted to the improvement of the mind. Then everything is clothed with a freshness and curiosity which time will soon efface.

At this time, too, it is well known memories have a tenacity to an extent surprising to those but a few years older. Then you have but few cares, save those of an examination at the end of your session's work, to rise up and trouble you. Few sleepless nights are spent in anxious thought for the morrow, for the result of a desperate case, or in planning out a serious, and it may be a dangerous, operation for the cure of some deadly malady.

At present you view from a pedestal of comfort the deepening lines of anxious thought on the faces of those embarked upon the tempestuous sea of practice. In a few short years you, too, will be plunged into that whirlpool, it may be to look back with regret to the days that, alas, will then be gone far beyond recalling.

I warn you the fault will be yours if you emerge from this place feeling that there are things which you might, nay, which you would have done differently, if you only had another opportunity.

> "For of all sad words of tongue and pen,
> The saddest are these, 'It might have been.'"

Do not imagine that when you have passed the examinations necessary to have your name placed on the register all your study is over. Far from it. Your whole life—and it ought to be a source of great gratification to you to know it—will be one long studentship. The old Grecian aphorism "ὁ δὲ καίρος ὀξύς," "opportunity is fleeting," is worth remembering. Opportunity, it is said, comes to everyone, but few are prepared to seize it ere it passes. Some of you, I may be permitted to hope, possess abilities, as yet lying dormant but equal to any emergencies or discoveries which may ultimately make life pleasanter, soothe pain, or cut short sickness and disease, if only aroused and infused with energy.

You may now ask me what is to be the ultimate end and reward you are to obtain for all your trouble? Never has there been such a dearth of young medical men. While the Census shows a steady increase in the population, the Medical Register shows a steady decrease in the numbers seeking to have their names placed thereon. Never have there been such fine openings for those just qualified or about to qualify as at present exist—openings which will bring in a quicker return for the outlay than in any other profession; but for you there are ultimately no great prizes to which I can point as a stimulus to your energy such as lie awaiting ability and perseverance for those practising at the Bar. For you there is no "Bench," with its handsome income and nice pension to soothe the recipient's old age and "make his path to the tomb less gloomy." The medical man must die in harness.

True it is, some amass fortunes, but these are few indeed. The reward of man is not always proportionate to his merit. Many a scientific man makes but a mere pittance—scarcely sufficient to keep body and soul together—while many a quack amasses a fortune.

An easy conscience is often truly the scientific man's sole reward.

> "In the lexicon of youth, which Fate reserves
> For a bright manhood, there is no such word
> As——fail."

You may fail to acquire wealth, but you cannot fail to acquire proficiency in your profession if you persevere.

Many of you, and often those of you who seek after and acquire the greatest degree of proficiency in your profession, will meet with disappointments. Do not be discouraged. Patience is necessary in this as in every other walk in life. It is said the suicide of ambition is the refusal to wait.

But remember—

> "When Fortune means to men most good
> She looks upon them with a threatening eye."

Let me mention the fields that are open to you:—

The Indian Medical Service.
The Royal Army Medical Service.
The Naval Medical Service.
Poor Law Medical Appointments.
Assistancies in Engand.
Foreign Government Services.
Private practice at home or abroad, and, hardest of all, private teaching.

A Royal Commission has sat, and made important alterations and improvements in the Royal Army Medical Service, so that the authorities should no longer find any difficulty in obtaining the requisite number of well-trained medical men.

Similar changes, I am in a position to say, are likely soon to be made in the sister service. As regards Poor Law Medical Appointments, these are to my mind the worst paid appointments and their officers the hardest worked in the world, while the manner of election is simply iniquitous—the qualifications mainly considered are those of religion, politics, and the school in which the candidates received their education rather than proficiency in their profession, while I am informed that even bribery is not unknown.

Beneath the rough coat and blunt exterior of the country practitioner, said Sir Walter Scott, you will often find professional skill, enthusiasm, intelligence, humanity, courage, and science. True it is, and no one will deny that the poor in the country require skill and knowledge as much as those in our large cities, but until the method of election of poor law medical officers is simply that of competitive examination, and until the salaries are raised from the mere pittance they are in most cases (many men pay their coachmen as much as these officers get), we can scarcely expect first-class men to become candidates for such appointments. It may be said their salaries are supplemented by the private practice of the districts in which they work; true, but what private practice, may I ask, is a man likely to get in the Isles of Arran or in Achill?

In asking you to make use of energy and perseverance in the study of your profession we cannot do so without leading you to expect something from us in return. The student is no bad critic. His opinions may be often hastily formed and perhaps forcibly expressed, but they are generally correct. He will not be slow to recognise the abilities of his teacher, who must not be a man of one book, or of antiquated ideas. "*Qui non proficit deficit.*" He who does not advance goes backward. Your teacher must ever keep reading and learning. Enthusiasm begets enthusiasm, and so a teacher influences for good or the reverse each member of his class.

It now only remains for me to conclude by thanking you for your indulgence and by commending to you the last words of the illustrious Velpeau, who, when Death was already seizing him in his icy grasp, faltered to a faithful friend beside him—"*Travaillons toujours.*"

# PART II.

# REVIEWS AND BIBLIOGRAPHICAL NOTICES.

*Contributions to the Science of Medicine.* Dedicated by his Pupils to William Henry Welch on the Twenty-fifth Anniversary of his Doctorate. The Johns Hopkins Press, Baltimore. 1900. Pp. 1,066.

THIS magnificent *Festschrift* appears as Volume IX. of the Johns Hopkins Hospital Reports—a publication which we have frequently had to notice in these pages. The present volume contains thirty-eight papers, most of them of considerable length, all of them of great scientific value and interest. The text is profusely illustrated by plates and drawings, and the whole is brought out in the handsome style to which we are accustomed in the publications of the Johns Hopkins Press. It is in every way a production of which all who are connected with it may well feel proud, and we would particularly congratulate Professor Welch, who has done so much to raise the medical department of his University to its present eminent position, on receiving such a gratifying mark of affection and respect from his old pupils.

It would not be possible for us, within our limited space, to notice all the papers in this remarkable volume. We can only briefly refer to a few of them, selecting those whose practical interest appears most evidently.

The first paper is by Professor Mall, and treats of a subject on which as yet but little work has been done. The normal human embryo has received much attention of recent years, and the magnificent works of His, Minot and others have rendered this a pretty well-known object. Mall studies here "The Pathology of the Early Human Embryo." His work is founded on the examination of 50 pathological embryos, 49 of which have been cut into serial sections. The work is of the most elaborate character. The malformations are considered under four heads—viz., 1. Arrested development of the embryo, with continued growth of the ovum. 2. Degeneration of the embryo, leaving only the umbilical cord. 3. Ova, normal in form, without embryos and uterine moles. 4. Vesicular forms of pathological embryos. A most valuable appendix gives the measurements of normal human embryos, as observed by Mall himself and recorded by other writers, which enables comparisons to be made between pathological and normal embryos of corresponding age. The paper is illustrated by six plates in heliotype containing an immense number of figures, and also by numerous drawings in the text. A most complete description of all the specimens is given.

A paper by C. A. Herter details the results of a long and laborious investigation on "Urea in Some of its Physiological and Pathological Relations." When urea and saline substances are injected together into the blood the elimination of these bodies does not run parallel, but the falling off in the excretion of sodium chloride is much greater than that of urea. This is marked when the kidney is damaged by operation or by injection of acid sodium phosphate. This would suggest that the process by which urea is eliminated is different from that by which saline matter is discharged. As to the share taken by urea in the production of so-called uræmic symptoms in men, the author expresses himself with great caution. His experimental observations and analyses of the blood of uræmic patients lead him to consider it as in the highest degree probable that urea plays a part, and a leading part, in bringing on uræmic symptoms in certain patients with chronic nephritis. They do not, however, exclude the possibility that other urinary constituents may contribute in some degree to the production of the symptoms. What these constituents are is still unknown. This paper will be found full of interest to everyone engaged in the study of the physiology and pathology of the kidney.

One of the most remarkable papers contained in this volume is that by J. M. Flint on "The Blood-vessels, Angiogenesis, Organogenesis, Reticulum, and Histology of the Adrenal." This is probably the most exhaustive account of the development and structure of the suprarenal capsule which has yet appeared. Every element of the organ has been studied by all the most advanced methods of modern anatomy. The paper extends to 75 pages, and is illustrated by eight plates of great beauty. Our space will not permit us to reproduce even the summary of conclusions, which occupies five large pages, but we would direct the attention of our readers, even those who are not anatomists, to the first plate, showing the blood supply, the histology and the connective tissue framework, which is a reticulum in the sense of Spalteholz and Mall, as shown in a reconstruction of the dog's adrenal: that is, the organ, after injection, is cut into serial sections, each section modelled in wax, and, these being put together, the organ is reconstructed in wax. No anatomist can afford to neglect this superb work.

An interesting experimental research by Dr. R. L. Randolph is on "The Regeneration of the Crystalline Lens." The regeneration of this organ has not as yet been conclusively demonstrated to occur in man, but has frequently been said to occur in the lower animals. Randolph finds in rabbits that regeneration occurs only if some of the old lens fibres are left behind, but in the newt regeneration takes place even if the whole lens has been removed in its capsule. Here regeneration is effected by the iris. The remarkable results of Kochs and of Colucci, who obtained a similar regeneration in the salamander, are thus confirmed.

Dr. Blumer describes "The Structure of the Tumours in a Case of Bilateral Cholestectamatous Endotheliomata of the Choroid Plexus," which had not produced any symptoms during life. The nature and origin of tumours of this class are obscure. In the present case Blumer gives the sequence of events as follows:—"The first change is a proliferation of the endothelial cells of the perivascular lymph spaces; this is followed by a gradual thinning of the walls of the spaces and a subsequent escape of blood into them, then cholesterine appears in the blood infiltrated tissue, spreading the walls of the spaces apart, so that they surround the cholesterine crystals; finally a proliferative process takes place in the connective tissue, which results at first in the formation of young connective tissue and giant cells, later in the organisation of these elements into fully formed connective tissue, which causes thickening of the walls of the cholesterine spaces."

Dr. H. U. Williams contributes an interesting paper on the "New Formation of Elastic Fibres, especially in the Stroma of Carcinomata." He finds —"1. When the stroma of carcinoma itself is of new formation it is usually free from elastic fibres. 2. Newly-formed elastic fibres may occur in the stroma, though rarely, and they are likely to be fine in quality and small in number. 3. The tumours, in which newly-formed elastic fibres occurred, either contained a large amount of connective tissue stroma, or the newly-formed fibres were in connection with pre-existing elastic elements of the original parts."

In connection with the "Bacillary Origin of Cirrhosis of the Liver," the paper of Dr. G. H. Weaver is of interest. From the body of a guinea-pig which died of pneumonia a bacillus was isolated, which, from its staining and cultural properties, is classed in the colon group of organisms. It was pathogenic for guinea-pigs, as was the culture fluid after sterilisation by heat or filtration. Among other changes produced was a marked cirrhosis of the liver. Rabbits, mice, pigeons, squirrels, and frogs were immune.

Besides the paper on the suprarenal capsule already noticed, we have several other anatomical works of a remarkable character. J. B. M'Callum writes on "The Muscular Architecture and Growth of the Ventricles of the Heart;" Dr. G. E. Brewer on "The Surgical Anatomy of the Gall Bladder and Ducts;" Dr. C. R. Bardeen on "The Development of the Musculature of the Body Wall in the Pig, including its Histogenesis and its Relations to the Myotomes and to the Skeletal and Nervous Apparatus;" Dr. J. G. Clarke on "The Origin, Development, and Degeneration of the Blood-vessels of the Human Ovary;" Dr. Stewart Paton on "The Histogenesis of the Cellular Elements in the Cerebral Cortex;" and Florence R. Sabin on "A Model of the Medulla, Pons and Mid-brain of a New-born Babe." All these papers are of great merit, and are richly illustrated with plates and drawings. Some of these are truly marvellous works of art, as, for instance, Plate V. of Dr. Clarke's paper, giving a reconstruction drawing of the ovary of a young woman at the time of active menstrual life, and the plates showing different views of the reconstructed nerve centres of the newly-born child. This reconstruction is a genuine triumph of technical skill and patience, and the description of how it was made, and the facts brought to light by its study, make this paper one of the most remarkable in the volume.

A paper of no less practical than scientific interest is entitled "Experimental and Surgical Notes upon the Bacteriology of the Upper Portion of the Alimentary Canal, with Observations on the Establishment there of an Amicrobic State as a Preliminary to Operative Procedures on the Stomach and Small Intestine." The authors, Drs. Cushing and Liwingood, were struck by the rapid recovery of a man who, twenty-seven hours before his admission, had been shot through the abdomen. It was found that there were four perforations, all in the upper part of the jejunum. The patient had had no food for some time before the injury, and had taken nothing since. Although there was extravasation of jejunal contents there was only very slight peritonitis, and cultures from the exudation showed only a few colonies of staphylococci. The perforations were sutured, and the abdomen closed without drainage. Recovery was uneventful. The authors have made a large number of observations on human intestines, both during operations and in cases of fistula, and have also performed a long series of experiments on dogs and rabbits. The general result is that in the fasting condition, during health, the stomach, duodenum, and the upper part of the jejunum, so far as the gut is empty, are sterile, and that the bacteria found there under other circumstances are those introduced with the food. The great importance of this is evident, for, when operations on the upper part of the digestive canal have to be undertaken, sterility of the contents of the gut can be ensured by careful cleansing of the mouth and sterilisation of the food. In this way the risks of peritonitis are lessened, as these risks are in proportion to the number and pathogenicity of the organisms present. This paper is one well worthy of the notice of both physicians and surgeons, and contains also much of bacteriological and physiological interest.

The concluding paper is the record of "A Case in which Two Hundred and Eight Foreign Bodies and Seventy-four Grams of Broken Glass were Extracted from the Stomach." Among the bodies removed were 28 pieces of chain, measuring in all 594 cm.; 99 nails, including 10 horse-shoe nails, 16 others 7½ cm. long, 8 others 6 cm. long; 50 tacks, 12 pins, 7 knife blades, &c. These objects are represented in two large plates, and form a true curiosity of surgery. Not the least curious part of the case is that the patient recovered.

The short notice which we have been able to give of some of the papers in this volume will show the interest of its contents. The still more numerous contributions which we have been compelled to leave unnoticed do not fall in interest and importance below those to which we have called attention. On the whole the level of excellence reached is very high indeed, and the work is a most valuable contribution to medical science.

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*Arsenical Poisoning in Beer Drinkers.* By T. N. KELYNACK, M.D., M.R.C.P.; Medical Registrar (late Pathologist) Manchester Royal Infirmary; Assistant to the Professor of Medicine in the Owens College, &c.; and WILLIAM KIRKBY, F.L.S., Lecturer on Pharmacognosy in the Owens College, Manchester. With 16 Illustrations. London: Baillière, Tindall and Cox. 1901. Pp. 125.

THIS work gives an excellent account of the features of the epidemic of arsenical poisoning which has recently occurred in Manchester and the surrounding district. The very abundant material at the authors' disposal has been carefully worked up, and the result is that, apart from the more or less temporary interest that attaches to the epidemic, we have here an important and valuable contribution to the literature of chronic arsenical poisoning.

The first part of the work is clinical—the symptoms and pathological conditions produced by the poison are fully analysed and described. A number of plates reproduced from photographs bring before the eyes in a striking manner many of the features of the disease. Especially remarkable are the illustrations of the extreme degree of pigmentation of the skin which occurred in many cases.

In the remainder of the work the authors discuss the chemical aspects of the poisoning. To identify the extremely minute quantities of arsenic present in many samples of beer, they employed Gutzeit's test—the action of arsenuretted hydrogen on filter paper impregnated with mercuric chloride. They found that by means of this test they could detect traces of arsenic when one part is present in seven million parts of fluid. Tables are given showing the amount of arsenic found in various samples of beer. In one specimen as much as 1·4 grains of $As_2O_3$ per gallon were found.

The book concludes with an excellent bibliography.

It seems to us, when we compare the amount of injury caused by arsenical beer with that caused by non-arsenical beer, that the most important sentence in the book is the following quotation from an article by Dr. Judson Bury:—"When we know that patients who visit our hospitals have been in the habit of taking 10, 20, and even 30 pints of beer a day, and as a result are gradually but surely losing their mental and physical powers, and then reflect on the present arsenical panic, we begin to wonder why there has never been an alcoholic panic. The scare with regard to arsenic has been fully justified, but surely consternation regarding poisoning by alcohol might be looked upon as equally natural."

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*The Medical Examination for Life Insurance and its Associated Clinical Methods, with Chapters on the Insurance of Substandard Lives and Accident Insurance.* By C. L. **Greene**, M.D., Clinical Professor of Medicine in the University of Minnesota. With 99 Illustrations. London: Rebman. 1901. Pp. 426.

We cannot in any way recommend this book. It is diffuse and tiresome in style, and a great deal of it is occupied with matter which to us appears wholly out of place in a work of this kind. The special information which an examiner to a life insurance company mainly wants is concerning lives which cannot be regarded as first-class as regards their expectations of life. He wants to know what is the practice of various offices in regard, say, to a tubercular or gouty family history. He wants to know something of the influence of certain trades or occupations upon longevity. Beyond this he does not need much except common sense and a competent knowledge of the various branches of medicine.

But what do we find in Dr. Greene's work? We find a large section of the book taken up with the most elementary facts—the physical signs of heart lesions, the position of the cardiac valves during the various phases of systole and diastole, the tests for albumen, *et hoc genus omne.* Surely an examiner employed by an insurance company should not need to consult a work on life insurance in order to understand such matters as these.

The work is excellently printed, and contains a number of nice diagrams of diseased hearts, and illustrations of urinary sediments such as would be an ornament to any work on Practice of Medicine intended for medical students.

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*On Some Cirrhoses of the Liver; being the Lumleian Lectures for the Year* 1900. By W. B. CHEADLE, M.D., Cantab., F.R.C.P.; Senior Physician and Lecturer on Clinical Medicine, St. Mary's Hospital; Consulting Physician to the Hospital for Sick Children. With Illustrations. London: Smith, Elder and Co. 1900. Pp. 109.

WE have here three lectures, well-written, practical, and instructive, evidently the outcome of years of close observation, upon a most important subject. Dr. Cheadle shows conclusively that the phenomena of the different varieties of cirrhosis are not separated into distinct and definite groups, as used to be almost invariably taught. For example, in alcoholic cirrhosis the liver is often enlarged, and jaundice not infrequently occurs. As he truly remarks, medical writers have been unduly biassed by the classical descriptions of Laennec and Handt. Dr. Cheadle's statements are based on careful observations, and are worthy of all confidence. Another point to which he specially calls attention is the favourable course which some cases run after having been tapped, sometimes repeatedly, for ascites. He urges that paracentesis should be done early, without waiting for the patient's strength and vitality to fail; and he mentions several important cases in which, after several tappings, all symptoms subsided for years.

The illustrations, which are excellently coloured, show in the clearest manner the microscopic anatomy of the various forms of cirrhosis.

We can warmly recommend these Lectures to our readers.

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*A Practical Treatise on Medical Diagnosis for Students and Physicians.* By JOHN H. MUSSER, M.D., Professor of Clinical Medicine in the University of Pennsylvania; Physician to the Philadelphia and Presbyterian Hospitals; Consulting Physician to the Women's Hospital of Philadelphia, &c. Fourth Edition, revised and enlarged. Illustrated with 250 woodcuts and 49 coloured plates. London: H. Kimpton. 1901. Pp. 1,105.

THIS large and handsome volume forms by far the most complete work on clinical diagnosis with which we are acquainted. It differs from such well-known works as those of Von Jaksch and Simon in that it treats not only of what we may call scientific diagnosis—*i.e.*, the application of chemistry and microscopy to medicine—but it also gives some account of the symptoms of diseases, and an excellent and splendidly illustrated description of the physical signs observed in patients. It, in fact, omits none of the factors which a physician takes into account in endeavouring to arrive at a diagnosis.

The first section treats of the Data obtained by Inquiry—family history, the story of the onset of the attack, the significance of various symptoms. The next part, about 340 pages in length, is concerned with the Data obtained by Observation. The phenomena met with in the different parts and systems of the body are considered one by one, the attitude and gait, the face, the hands, &c.; then infective diseases, with their microbes, temperature curves, eruptions, &c. Then the blood is fully described, both in health and disease.

The second half consists of Special Diagnosis—the symptoms and signs of disease of each organ and system. Take, for example, the heart and blood-vessels. The chapter on these—over 100 pages in length—contains a first-class account of the symptoms of disease, the pulse, the physical signs of cardiac disease, illustrated by many excellent diagrams; aneurysms with diagrams and pictures of patients—the whole being so full as to form a thoroughly excellent account of diseases of the circulatory system. The other organs are treated of as exhaustively. The section on the kidneys is characterised by unusually excellent pictures of urinary deposits. We have found Dr. Musser's work a veritable mine of information. We have had occasion recently to refer to it to elucidate some rather obscure and small points concerning which we failed to obtain information elsewhere, and we were not disappointed.

We heartily congratulate Dr. Musser on the success which has attended the first three editions, and we feel sure that this, the fourth, will meet with at least equal favour. For our part, we warmly commend it.

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*A Text-book of Gynæcology.* Edited by Charles A. L. Reed, A.M., M.D., President of the American Medical Association; Gynæcologist and Clinical Lecturer on Surgical Diseases of Women at the Cincinnati Hospital; Fellow of the British Gynæcological Association, &c., &c. Illustrated. London: Henry Kimpton. 1901. Pp. xxv. and 900.

The fine volume before us consists of a series of articles by various writers moulded into a homogeneous mass by

Dr. Reed, who has also contributed a large and important portion of the work. Amongst the names of the contributors we note some who belong to these countries—Ballantyne of Edinburgh, Cameron of Glasgow, Mayo Robson of Leeds, and Japp Sinclair of Manchester. The Editor's object has been to provide a working Manual for practitioners and students, and though perhaps his work may be considered to be somewhat advanced for these classes of readers, still he has succeeded in bringing out a work of a most reliable and valuable character. The tendency for authors to consider that practitioners and students require and will read large volumes on special subjects is distinctly American. It may be due to an excessive modesty which forbids the author to consider that his work is suitable for a specialist, or it may be that the American student and practitioner has the time and the desire to fully master each special subject. However that may be, Dr. Reed's text-book is well deserving of the attention of specialists.

We notice with much pleasure that in his selection of contributors Dr. Reed has not confined himself to gynæcological specialists, but that the services of pathologists of repute have been called in. In the nature of things, a gynæcologist has seldom or never the opportunity or the power of making himself an expert pathologist. These two branches of Medicine are directly opposed to one another, so far as the practising of them by the same individual is concerned, and, in consequence, gynæcological text-books are invariably weak in the essential subject of pathology. Dr. Reed's deliberate selection of pathologists such as Johnston of Montreal, Herzog of Chicago, and others, is one of several points which raise the work above the usual level of American gynæcologies.

Another feature in the work are the quotations from the text which take the place of the usual short description affixed to the illustrations. In some respects this is an admirable arrangement, and one which brings the illustration into a more living relationship with the text. But, on the other hand, it is apt to lead to rather incongruous or even absurd results. For instance, the legend "Interstitial fibromata of symmetrical development may be mistaken for pregnancy" is surmounted by a picture of what may be called a "mammelated" abdomen, affording an excellent idea of the effect of extreme separation of the recti on the position of an enlarged uterus; while the words "The child was removed by abdominal section" are placed under the drawing of a macerated infant gracefully balanced on the abdominal wall, with its funis passing through an incision into the abdominal cavity. All the illustrations are excellent—another American tendency.

Dr. Reed's work constitutes a really valuable addition to the already overwhelming number of American gynæcologies, and although it is surrounded by rivals it will not be swamped.

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*Gynæcology: A Manual for Students and Practitioners.* By MONTGOMERY A. CROCKETT, M.D., Adjunct Professor of Obstetrics and Clinical Gynæcology, Medical Department, University of Buffalo, &c., &c. With 107 Engravings. London: Henry Kimpton. 1901. Pp. 368.

THIS is a well-printed, nicely got up little work on gynæcology, of no very pronounced qualities in either a good or bad direction. It appears to us to be a fairly reliable handbook, for students, in which modern ideas are clearly stated, and the various pitfalls and hereditary errors in the main avoided. The little book is, of course, written in Americanese, but even that language cannot be held to be responsible for some of the terms which Dr. Crockett uses, or the sentences which he writes. The term "celiotomy" does not mean "an incision through the belly." The term cœliotomy means an incision *into* the belly. Again, if a "ureteral catheter" is spoken of, it is unnecessary to change the adjective and speak of "ureteric openings" and "ureteric irrigations." There is a strange sentence on page 287:—"In *absolute* sterility there is no conception whatever: in *relative* there is diminished procreative power." We fear that even Dr. Crockett himself has "no conception whatever" what this means.

On the whole, Dr. Crockett's book may be recommended to those for whom he intends it. Indeed, it may be said to be in many ways superior to several more pretentious works of its class. It does not teach the abuse of the sound. It does not unduly endeavour to perpetuate Marion Sims' position. And it does not perplex the student with the description of numerous out-of-date and worse than useless pessaries.

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*The Pocket Formulary for the Treatment of Disease in Children.* By Ludwig Freyberger, M.D. Vienna, M.R.C.P. Lond., M.R.C.S. Eng., Barrister-at Law, &c. Third revised and enlarged edition. Adapted to the new British Pharmacopœia. London: Rebman. 1901. Pp. 260.

It is not necessary to do much more than notice the publication of the third edition of this valuable formulary. It has been thoroughly revised and in part re-written, and has been brought into harmony with the last edition (1898) of the British Pharmacopœia. The most important addition to the work is a synopsis of the more common poisons, of the symptoms produced by them, and their treatment. This synopsis is arranged in alphabetical order, and runs to eighteen pages. Notwithstanding so important an addition, the price of the Pocket Formulary remains the same as before—namely, seven shillings and sixpence.

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*Arts under Arms: An University Man in Khaki.* By Maurice FitzGibbon, Moderator in Classics and B.A., Trinity College, Dublin University; late Trooper and Sergeant-Major, 45th Company (Irish Hunt Contingent) Imperial Yeomanry. London: Longmans, Green & Co. 1901. 8vo. Pp. 232.

The capture of the Thirteenth Battalion of Imperial Yeomanry by Boer-Commandant Christian De Wet after five days' resistance outside the town of Lindley in the Orange River Colony, was one of the most sensational of the series of "regrettable incidents" which have occurred from time to time during the progress of the South African War. Mr. Maurice FitzGibbon has told the story uncommonly well in the entertaining work which lies before us—a work, by the way, which possesses considerable literary merit and is full of promise for a "first attempt," as the author modestly phrases it in his preface.

From a medical standpoint also the work is by no means devoid of interest; witness Mr. FitzGibbon's account of his personal experience of inoculation as a preventive of typhoid fever. He writes:—"Soon after we left Las Palmas, fifty men were told off each day to undergo a new experience, as laid down in Queen's Regulations—typhoid 'inoculation.' What came to be termed 'pig-sticking drill' took place each afternoon at 3 p.m.; the patients received their hypodermic injection, were then told to walk about for an hour on deck, after that to lie down Socratic-wise, and await results which were far from pleasant. The common symptoms described were those of great heat—present in any case—followed by a shivering from top to toe, with a splitting headache thrown in, and a general feeling like that of a dog in a wet sack. In some cases men were back to duty in twenty-four hours, in others the effects remained for several days; and the whole after-deck was transformed into a temporary hospital." (Pages 70 and 71.)

After enumerating, on page 73, the articles included in the regulation kit, Mr. FitzGibbon states that some of his comrades, and presumably he himself, had provided themselves with a compass, field-glass, flint and steel, and a filter. The three former turned out afterwards to be of the greatest service; the filters were worse than useless. "A man never has time on active service to use a filter; it is an encumbrance until thrown away."

After the disaster at Lindley, the prisoners of war were marched off to Reitz, a little Free State town named after the last Secretary of the Free State Republic. Here dysentery and enteric fever broke out among the captured troops. There was no surgeon or hospital orderly—both had been left at Lindley. Colonel Spragge, having learned that Maurice FitzGibbon was a medical student of three years' standing, sent for him and requested him to take charge of the sick—in fact appointed him as medical officer to the captured battalion, and the Landdrost (or Mayor) of the town placed at his disposal an empty house as a hospital. On Monday, June 11, 1900, President Steyn visited this make-shift hospital. He was accompanied by the "Hoofdambulance," or Principal Medical Officer of the two Republics, a surgeon, A. E. Ramsbottom by name, who had been until the war in practice at Bloemfontein (not Johannesburg, as stated by our author). This gentleman is a Fellow of the Royal College of Surgeons in Ireland, and a Licentiate of the Royal College of Physicians of Ireland. Steyn asked to see the list of the patients, and seemed puzzled at the number of cases of dysentery entered, as the burghers do not suffer from that disease at that time of year (mid-winter). He requested FitzGibbon to dress the hand of his printer, who had had the misfortune to lacerate two of his fingers at Vrede three days before while printing off copies of a proclamation by which President Steyn declared the town of Vrede to be his capital and seat of Government. FitzGibbon did so, and then sat down and wrote upon a slip of paper:—

"To surgical attendance upon M. Douwes. printer to the Orange Free State Government, one guinea (£1 1s.)—Maurice FitzGibbon, Acting-Surgeon, 13th Battalion, I. Y."

"This," says the author, "I put into an envelope, addressed to the President himself, placed it in the printer's uninjured hand, and requested him to be the bearer of it to the Landdrost's house. Little did I expect to see the man again; but in half an hour he returned, and handed me, with thanks, a British sovereign and a Paul Kruger shilling."

A disaster, brought about by treachery, to the 4th (Militia) Battalion of the Derbyshire Regiment at Rhenoster Bridge, near Roodewal Station, on the "Imperial Military Railway," shortly afterwards contributed a quota of over forty men to the roll of patients treated in FitzGibbon's hospital. Among these was one destined to be his first and only death. "The poor fellow came in to me with a temperature of 105°; that night I found him crawling about on the floor of the room in which he lay, looking, as he told me, for the British lines. Two days later we buried him at the northern side of the cemetery at Reitz; one of his comrades so advised, 'the side nearest to Pretoria.'"

Relief came to the British wounded and prisoners of war at Reitz on Saturday, July 7, when General Broadwood, with his staff, commanding the Cavalry Brigade of Ian Hamilton's Division of forty-three thousand men, reined up at the door of FitzGibbon's hospital. The Principal Medical Officer of the Division lost no time in inspecting the patients in the hospital, and after making a searching inquiry into the treatment which had been adopted, he bade Maurice FitzGibbon to consider himself appointed to the rank and title of Acting-Surgeon. With this romance in military active service we may take leave of this well-written and most interesting narrative of "An University Man in Khaki"—a narrative which bears eloquent testimony to the truth of the motto on the title-page—"EX AFRICA SEMPER ALIQUID NOVI."

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## SECONDARY HÆMORRHAGE FOLLOWING THE USE OF SUPRARENAL EXTRACT.

DR. F. E. HOPKINS brings the notes of several cases forward to show that while the above extract is of great service while operating in the nasal cavity there is an increased risk of secondary hæmorrhage, and that unless this is foreseen and provided for great trouble to the operator, and not a little anxiety, will almost certainly be caused. He concludes his paper by a few extracts from the opinions of other operators, and the consensus of opinion is undoubtedly in favour of the use of the drug, but that careful plugging is necessary, or in slighter cases that patients should be supplied with some of the extract to use if hæmorrhage commences.

# PART III.

# SPECIAL REPORTS.

## REPORT ON PUBLIC HEALTH.[a]

By SIR CHARLES A. CAMERON, C.B., M.D.; D.P.H., Camb.: M. and Hon. F.R.C.P.I.; F.R.C.S.I.; F.I.C.; Ex-President, Hon. Dip. Public Health, and Professor of Hygiene and Chemistry, R.C.S.I.; Vice-President and Ex-President of the Royal Institute of Public Health, and of the Society of Public Analysts; Medical Officer of Health for Dublin; Hon. Member of the Hygienic Societies of France, Belgium, Paris, and Bordeaux, the Academy of Medicine, Sweden, and of the State Medical Society of California, &c.; Examiner in Sanitary Science, Royal University of Ireland; Member of the Army Sanitary Committee, &c.

### PUBLIC HEALTH IN LONDON.

MY friend, Dr. Shirley Murphy, the able Health Administrator of the Administrative County of London, has favoured me with a copy of his Annual Report for 1899. It contains a vast amount of interesting information. In the middle of the year 1899 the estimated population was 4,568,689. The death-rate in this vast population was the moderate one of 19·3 per 1,000 living. This rate was not the lowest of late years, as in 1884 it was 17·4; in 1896, 18·1; in 1897, 17·7; and in 1898, 18·2. Before these years the death-rate exceeded that of 1899, being always over 20. In the period 1841 to 1850 it was 24·8, and in the four following decades the figures were as follow:—23·7, 22·4, 22·5, and 20·5. Corrected for age and sex distribution, the London death-rate in 1899 would be 21·1—a rate lower than that of the great majority of the larger English and Irish towns.

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[a] The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of the Journal.

The death-rate caused by the principal zymotic diseases was 2·46—a rate lower than any of the 12 largest English towns, except Bristol and Bradford. During the last 10 years there has been no important increase or decrease in the zymotic death-rate. Diphtheria has increased of late years in the great metropolis. In 1899 the deaths ascribed to it were in the ratio of 0·43 per 1,000. The mean rate in the previous 10 years was 0·49 per 1,000. Though Dublin has a much higher death-rate from enteric fever than London, yet it has a much lower mortality from diphtheria. If the rates caused by the two diseases be included in one, then London and Dublin would be about equal.

Several of the local authorities give facilities for the diagnosis of diphtheria. Some have arranged to have bacteriological examination of suspected material from the throats of patients made at the Jenner Institute or at the Laboratory of the Royal Colleges of Physicians and Surgeons. Other of the sanitary authorities have made arrangements with various bacteriologists, or with the Clinical Research Association.

An account is given of several "return" cases of diphtheria. In one instance the bacillus was found in the nasal secretion, though both the throat and nose appeared to be perfectly healthy.

In one district—Lewisham—diphtheria appears to be very prevalent, the cases numbering in 1899 no fewer than 433. Dr. Joly, the district medical officer of health, states that there are two causes for this prevalence—(1) The nearness of the part of the district in which the cases chiefly occurred to a slowly-flowing river through low-lying ground, always kept damp; (2) The condition of a combined drainage system.

Dr. Harris, the able Medical Officer of Health for Islington, agrees with the statement made by Dr. Newsholme, of Brighton, that diphtheria becomes epidemic only in years in which the rainfall is deficient, the greater epidemic occurring after several years of low rainfall. Dr. Harris states that he compared the diphtheria returns with the rainfall, and that the results confirm Dr. Newsholme's views.

At Mile-end Old-town Dr. Taylor states that a number of children attending two particular schools suffered from diphtheria, and amongst those attending one of these schools the case mortality was great. On taking up the floor boards of the schoolroom a large amount of filth (including a dead cat and a dead rat) was discovered. On remedying this state of things the disease disappeared.

Dr. Murphy's statistics clearly indicate an increasing incidence of diphtheria amongst school-children. The influence of schools in spreading diphtheria is a *quæstio vexata*. Dr. Smith, Medical Officer of the London School Board, some time ago discussed the question, and stated that he did not consider that school had much influence on this disease. Many medical officers of health hold a contrary opinion. Dr. Murphy states that during the four weeks preceding the holidays of the London School Board children there were no reports of the disease in 169 children under three years old, 804 over three and under thirteen, and 269 of persons over thirteen years old. During the four weeks of holidays there was an increase of 7·7 per cent. in the cases of children under three years old (they may be termed non-school children), a decrease of 34·7 per cent. in the case of children from three to thirteen years, and a decrease of 11·9 in the case of persons more than thirteen years old. During the four weeks following the holidays there was a decrease of 9·3 per cent. in the case of the infants, an increase of 44·6 per cent. in the case of children from three to thirteen years, and of 13·9 per cent. in the case of persons aged above thirteen years. This seems to be a very strong piece of evidence in favour of the view that diphtheria is spread by schools.

In London, as in Dublin, typhus fever has become a rare disease. In the former city only two deaths were attributed to it in 1899. In the decennial period, 1871 to 1880, the death-rate from this disease was 0·55 per 10,000.

Enteric fever was more prevalent in 1899 than it had been for many years previously, yet it caused a mortality rate of only 0·17 per 1,000. In several of the districts many cases of the disease were attributed by medical men to the ingestion of infected cockles, oysters, and mussels. In Newington one-half the cases which occurred from the middle of September to the middle of October were attributed to the ingestion of shell-fish.

An interesting account is given of the examination of the dairy cows in London, made by order of the County Council. For this purpose a veterinary surgeon, Mr. Simpson, and two assistants were employed. The time occupied was seven and a-half weeks, and the cost of the veterinary examination was £78 4s. 6d.; 5,144[a] cows were examined, and of these 4,464 were found to be free from disease or abnormality of the udder. Of the remaining 680 cows, 214 gave evidence of atrophy of one or more quarters; 165 were affected with chronic induration of the udder; 112 were "dead off"—*i.e.*, yielding poor milk from natural causes; 82 were subjects of acute mastitis; 38 had strictures of milk glands, deformities, abscesses, &c.; 20 had hypertrophied udders, but without induration; 7 were certainly affected with tubercular disease of the udder; and 5 were suspected to be similarly affected.

The statistics in reference to the registration of tenement houses in London show how small a proportion of the houses in that agglomeration of towns is registered, as compared with Dublin. In Kensington, with a population of 170,414, 1,681 tenement houses were registered. In Fulham, population 122,652, 329; Shoreditch, population 121,279, 125; Strand, population 23,782, 112; St. Pancras, population 239,766, 293. Bethnal Green authority did not seem to think it of much use to register tenement houses.

As regards common lodging houses, 544 are on the register. They afford accommodation for 28,229 persons. They are systematically visited.

The managers of nightly lodging-houses established by the Salvation Army, and nightly "shelters" provided by charitable persons, objected to register their premises on the ground that they were not conducted for gain. They were prosecuted by the County Council, and the magistrates held that they need not be registered—a decision that was soon after reversed, on case stated, by the Queen's Bench.

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[a] The number of cows kept in London is comparatively small. In Dublin in the winter often about 5,000 cows are kept.

As regards shelters for persons whose houses are undergoing disinfection, their use varies very much in the different districts. In the Strand, St. Luke, St. George in the East, Plumstead, and Greenwich, they were never used at all. In some other districts a few persons went into them, whilst in St. George the Martyr's 101 families entered the shelter in 1899. In Dublin there is a large and comfortable house for this purpose, but it is difficult to induce anyone to make use of it. Indeed, it has almost solely been used to isolate persons who had been in contact with small-pox or bubonic plague patients.

I would commend those who are continually stating that the insanitary condition of the Dublin tenement houses is unequalled to read Dr. Murphy's account of some of the London districts. Kensington is a well-known district, in which there are very handsome ranges of buildings, yet here is what Dr. Hamer, Assistant Medical Officer of Health, says in reference to this fashionable quarter of London:—"In the course of my recent inspection I visited between 500 and 600 sets of premises in Kensington—444 of these being dwellinghouses (excluding common lodging houses) occupied for the most part by persons belonging to the working classes. In 285—*i.e.*, 64 per cent.—of these houses defects of one kind or other were found." Again, "The number of houses in which defective conditions were met with was as follows: Dampness of walls of rooms in 21 instances, dirty condition of rooms in 211 instances, conditions of dilapidation (other than those to be hereafter specified) 136 instances, defective yard paving in 22 instances, defective rooms in 23 instances, defective traps in yards and cellars in only 5 instances, defective sink waste pipes 1 instance, defective rain-water pipes in 10 instances, eaves gutter absent or defective in 4 instances. In 5 instances water-closets were found to be 'choked,' in 10 instances water-closets were cracked or broken, in 21 instances the flushing apparatus was out of order, in 38 instances water-closet pans were found in a foul condition, and in 9 instances the flush of water was specially noted as inadequate." Amongst other defects, overcrowding was found in 61 rooms, and an undue accumulation of house refuse was found in 23 houses. The percentage of houses in which defects were found was no less than 70.

### INCIDENCE OF TYPHOID FEVER IN HOUSES SUPPLIED WITH DIFFERENT FORMS OF SANITARY ACCOMMODATION.

Dr. Robert Dick, Medical Officer of Health for the Hunter River Combined Sanitary District, Australia, has presented to his authority an interesting report for the year 1899. In reference to typhoid fever he gives the following table:—

| | | Number | Ratio of Typhoid cases to houses |
|---|---|---|---|
| **Newcastle** | Houses with pails | 1,556 | 1 to 111 |
| | „ „ water-closets | 723 | 1 to 66 |
| **Wickham** | „ „ pails | 1,100 | 1 to 100 |
| | „ „ cesspits | 195 | 1 to 48 |
| **West Maitland** | „ „ pails | 200 | 1 to 83 |
| | „ „ cesspits | 1,300 | 1 to 52 |
| **Merewether** | „ „ pails | 650 | 1 to 50 |
| | „ „ cesspits | 20 | 1 to 7 |

The results at Newcastle seem to indicate that water-closets are favourable to the spread of typhoid fever, although it has been repeatedly shown in this Journal that in the water-carriage of excreta towns in England there is less typhoid fever than in the midden towns. Dr. Dick, however, believes that the exceptional state of things at Newcastle is due to the very defective condition of the sewerage system of that town. He found that disconnection between the house and the street sewers was not attended to, that the taps were of antiquated pattern, and that sometimes they were absent altogether. No doubt a good system of pails is better than a bad system of water-carriage. Dr. Dick shows conclusively that cesspools and middens are most objectionable. The fact that every seventh house in Merewether which had cesspools was invaded by typhoid fever proves the necessity of abolishing these store-places of excreta.

### REPORT OF THE LOCAL GOVERNMENT BOARD.

The Twenty-ninth Annual Report of the English Local Government Board and its Supplement for 1899-1900, just issued, is, as usual, full of interesting matter. The supplement is a volume of 648 pages, comprising the report of the Medical Officer, Dr. W. H. Power, the successor of the lamented Sir Richard Thorne, K.C.B.

### GROWTH OF BACILLI IN SOILS.

Dr. Sidney's valuable researches in reference to the development of typhoid bacilli have been referred to in my previous reports. In the present volume there is a further contribution to this important subject. He describes the interaction of the organisms of the soil and the typhoid bacilli under simple conditions. His conclusions are as follow:—

"1. Certain cultivated soils, especially garden soils, when sterilised are favourable to the vitality and growth of the typhoid bacillus. Under comparable conditions other virgin or uncultivated soils do not support the bacillus, which rapidly dies. A previously virgin soil which had recently come under grass cultivation was used in the present experiments (Soil II. of this Report). This soil was found, when sterilised, to support the life of the bacillus for a certain period, but not nearly so long as the more definitely cultivated garden soils.

"2. When the typhoid bacillus is added to unsterilised soils, kept very moist and at a temperature of about 19° to 37° C., it has not been possible to recover it from the soil, even after a short period, as was shown in my Report of last year. If, however, the soil be kept in a drier condition and at a low temperature (2° to

12° C.), as in this year's experiments, the bacillus can be regained after a certain interval, which in these experiments did not exceed 12 days. After this it appeared to die out.

"3. The reason of the disappearance of the typhoid bacillus from the unsterilised soils appears to be the antagonism of some of the soil micro-organisms to its growth; and there is some evidence to show that, under the conditions of experiment, the disappearance of the bacillus has taken place *pari passu* with an increase in the number of the putrefactive bacteria.

"4. As far as is known, the typhoid bacillus has no resting stage. It has no spores, so that if it once dies it cannot be expected to reappear, unless a fresh inoculation occur."

### TYPHOID FEVER FROM SHELL-FISH.

I was the first to point out the fact that shell-fish occasionally contained sewage, and that on such occasions might be, and probably was, the means of spreading typhoid fever. That was twenty years ago, and since that time proofs of the correctness of my views have been multiplying. In Dr. Power's report Dr. Klein has recorded bacteriological examinations of cockles taken from foreshores notoriously polluted with sewage. He summarises the results of his investigations as follows:—

"1. No definite typhoid bacillus colonies were discovered. In one phenol-gelatine plate only did there appear a colony which might be typhoid bacillus. This colony comprised very motile cylindrical bacilli, closely resembling in these respects and in size the typhoid bacillus. Sub-cultures were accordingly made in shake and streak gelatine, in broth, and in litmus milk. As a result, the microbe in response to these tests also behaved like the typhoid bacillus—that is to say, it did not liquefy the gelatine; while in aspect and in growth, in not producing gas in gelatine, in not curdling but in reddening litmus milk, and in not producing indol in broth after four to five days at 37° C., it presented the characters of the typhoid bacillus. But on subjecting this microbe to test with typhoid blood serum, it failed to undergo any clumping or agglutination; so that I do not feel justified in considering it the bacillus of typhoid fever.

"2. Typical bacillus coli was detected in three out of the eight cockles.

"3. Typical virulent bacillus enteritidis sporogenes was detected in four out of the eight cockles.

"From this it appears that the interior of some of these cockles did, as matter of fact, contain microbes of sewage."

"From a street hawker, a dozen raw cockles (in their shells) were bought, and eight of them were each subjected to the several bacterioscopic analyses adopted in the previous series. The result was that:—

"1. No typhoid bacillus was found;

"2. Bacillus coli (typical) was found in five out of the eight cockles;

"3. Virulent bacillus enteritidis sporogenes was found in four out of the eight cockles."

No typhoid bacilli were found in the cockles, but ordinary sewage might be hundreds of times examined without detecting them in it. The fluid by which the cockles were surrounded was not examined for the bacilli. Sewage organisms, and one of a dangerous character, were, however, found in the cockles, and, therefore, it might happen at any time that the sewage which obtained entry into these animals might contain typhoid bacilli. It is well known that a specimen of ordinary sewage, if bacteriologically examined, would be rarely found to contain the *materies morbi* of typhoid fever. Many cockles taken from sewage-polluted foreshores might be examined without the *Bacillus typhosus* being detected.

Although I was the first to direct attention to the danger which might result from eating raw shell-fish taken from the estuaries and bays polluted by sewage, yet I should be sorry if there was such a prejudice against oysters, and that would lead to the partial disease. When taken from a clean foreshore oysters are a safe and valuable food. I have recently examined oysters taken from the Galway coast near Clifden, and found them free from objectionable micro-organisms. The beds from which they were taken are the property of Mr. Jackson, an English gentleman who resides near Clifden.

## BACTERIOLOGICAL INVESTIGATIONS.

The original researches in the Appendix are mainly bacterioscopic. Dr. Gordon has demonstrated the constant presence of streptococcus in the throats of patients affected with mild and uncomplicated scarlatina—confirming Klein's previous observations. Dr. Gordon further endeavoured to ascertain what was the predominant micro-organism, if any, in the body of the scarlatina patient. He considers that in the cadaver from this disease there is not only a streptococcus, but one which is derivatively and potentially identical with *Streptococcus scarlatinæ* or *conglomeratus.*

Dr. Houston considers that the presence of microbes of the streptococcus and staphylococcus classes in water indicates, especially if they are numerous, animal impurities. He found them absent from water of undoubted purity, and from the washings of clean soils.

Dr. Klein, in his studies on the development of various micro-organisms in milk, shows that the *Bacillus typhosus* flourishes in this medium, even at so high a temperature as 37° C.

(*To be continued.*)

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### HYDATID DISEASE OF THE BREAST.

LE CONTÉ (*American Journal of the Medical Sciences*, September' 1901) reports an interesting case of hydatid disease of the breast, occurring in a young negro woman, in which the diagnosis of cystic adenoma was made, and only after the growth was removed by operation and subjected to microscopic examination was the real condition revealed. He considers it of the utmost importance that hydatid tumours should be removed by operative measures as soon as the diagnosis has been made. The condition is so rare in this climate that the diagnosis presents many features of difficulty.

### INERTNESS OF PETROLEUM COMPOUNDS.

DR. ROBERT REYBURN gives an account of experiments with petroleum compounds given internally (*Medical News*, New York, August 24th, 1901). He concludes:—"If we consider (1) the entire insolubility of petrolatum and its compounds in either the gastric juice or the fluid of the intestinal canal, and (2) the fact that when petrolatum is given internally the whole of it can be recovered from the fæces, we are warranted in stating that petrolatum can in no sense be considered a substitute for cod-liver oil as a nutrient and restorative, and (3) that the usefulness of petrolatum as a remedy must depend upon its unirritating and demulcent properties."

# PART IV.

# MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

## SECTION OF STATE MEDICINE.

President—SIR C. A. CAMERON, C.B., M.D.
Sectional Secretary—NINIAN FALKINER, M.D.

*Friday, April 26, 1901.*

THE PRESIDENT in the Chair.

### *On the Mortality of Infants under one year from Improper or Imperfect Feeding, with Suggestions for Public Instruction to Parents and Nurses on the Subject.*

**DR. GEO. P. COPE** read a paper on the above heading, enumerating a list of diseases, together with the number of deaths caused by same (made out from the Registrar-General's returns of registered deaths in Ireland for the years 1890 to 1899), which can be considered directly or indirectly due to improper feeding. For the last *five* years—1895 to 1899—there was an increase of 2,188 deaths compared with the previous *five* years, 1890 to 1894, and for the last year, 1899, there was a further increase of 206 deaths compared with the average for the five years, 1895–99. He pointed out that a great number of deaths under the headings of debility, inanition, convulsions and dentition were registered as uncertified, and suggested that registrars of deaths who were medical men should try and ascertain from the informants what led up to these symptoms, and register the deaths under proper diseases. Daily, mothers bring their infants to dispensaries suffering from the effects of improper feeding; these infants are fed on all kinds of starchy and animal food, but were given these things from pure ignorance, not knowing they were doing harm. The suggestion recommended, Dr. Cope pointed out, would reach every parent in Ireland within a very short period, and should tend to lessen the mortality from these causes. It is the duty of every registrar of births, at the time of registration, to issue to the informant a vaccination paper containing instructions when the child should be vaccinated. At the time of registration registrars should be instructed to give to every informant a paper containing rules in relation to the proper feeding and general management of infants, &c.; this document should be provided by Government, and issued to the registrars at the time they receive their supply of vaccination papers from Charlemont House. He drew attention to the report of the Committee appointed last year to consider the high death-rate in Dublin, and dealing with the subject of infantile diarrhœa, he pointed out that mothers who could not suckle their children throughout the early months of infancy ought to be encouraged to take necessary precautions (especially during the summer months) in feeding their infants, and that it would be advisable to embody in the instructions certain directions how to sterilise milk; also suggestions on the elementary rules of hygiene. This would educate the parents to ventilate and keep their rooms free from dirt and contagion, as well as to the proper feeding fit for infants. In conclusion he asks the Section of State Medicine to recommend the adoption of his suggestions to the Council of the Academy, and that a committee be appointed to draw up rules on the feeding of infants, sterilisation of milk, and instructions on the elementary uses of hygiene.

DR. LANGFORD SYMES said that the scientific regulation of artificial feeding on the lines suggested by Dr. Cope would certainly diminish, if not abolish, this mortality. Atrophy or marasmus was practically starvation, and a child might get a large amount of food but no nourishment, and a child might be starving when being fed on the richest kind of food, which it was perfectly unable to digest. Several people had examined the intestines of children who had died from this cause, and, in the later stages, they had found the beautiful structures for digestion and absorption completely abolished, and the intestines rendered like a hose or Indiarubber tube, the food going in at one end and rushing out at the other. The figures of mortality for the last ten years were appalling, and they might add to them a large proportion of other diseases, which might have had their origin in bad feeding. Convulsions were not always due to bad feeding; they might occur in the initial stages of fevers; but improper feeding was, undoubtedly, a frequent cause. Diarrhœa held a high place in the list, and that was entirely due to improper feeding. As to this diarrhœa it has been found that 97 per cent. of the deaths have been fed by hand, 3 per cent. being breast-fed. In times of great distress, during the siege of Paris and in the Lancashire famine, infant mortality was diminished, probably on account of breast-feeding being entirely adopted. Hyper-lactation was a bad thing, but it was better than poisonous food. He considered rickets to be the most serious of all causes, though the figures had not shown a great mortality from this cause. Rickets made diseases such as whooping-cough, pneumonia, bronchitis, &c., more dangerous, and the certified cause of death was often one of these diseases, when the real cause was rickets. He, therefore, believed rickets to be a greater cause of infantile mortality even than bad feeding; but it was due to bad feeding. With regard to the remedy, he did not know anything better than Dr. Cope's suggestions. Nothing could be done without the co-operation of the Registrar-General and the Local Government Board. All they could do was to represent the state of the case to the proper authorities. The Royal College of Physicians was the proper body to frame these rules, and the Registrar-General was the authority to circulate them, with the sanction of the Local Government Board.

**Professor McWeeney** said it seemed to him that, because they were a prolific race, they rather neglected their infants. In France, where the race was less prolific, more care was taken, and in the regulations drawn up at the Assistance Publique for the Care of Children, especially foundlings, there were many points which they might adopt. Speaking from the pathological point of view, he was in great ignorance as to the exact causation of death in many cases certified as marasmus, tabes mesenterica, and the like. At his own hospital it was the rarest possible thing to get a *post mortem* on a child under five—not one such autopsy in the year. He considered that, to make themselves absolutely certain as to the true cause of death, an attempt should be made by the profession to obtain autopsies on young children by an expert in as many cases as possible. It occurred to him that perhaps a representation might be made to the medical officers of the workhouses that some arrangement could be made whereby autopsies by an expert might be arranged. If they could have 100 consecutive autopsies on cases of infantile marasmus, diarrhœa, and tabes mesenterica, done by an expert, and helped by bacteriological examination, they would be better able to draw up rules to prevent the mortality. He passed over such well-known causes of danger as the tubercle bacillus in milk. There was one point to which insufficient attention had been paid, and that was the danger of giving children what he might call pseudo-sterilised milk—milk Pasteurised, raised to a point below boiling point, in which lactic fermentation had been checked, but spore-forming organisms were still present. The lactic organisms being done away with, the milk did not turn sour in the ordinary way, but the sporing forms, as Flügge has shown, produced toxic peptones or albumoses, which, when given to animals, produced diarrhœa, convulsions, and death. He, therefore, suggested that, when referring to the scalding of milk, an urgent recommendation should be made that, after Pasteurisation or sterilisation, it should be given to the child at once, or kept at such a low temperature, by being placed in cold water, as to prevent growth. A certain amount of the mortality in the upper and middle class infants might be due to this pseudo-sterilised milk. Leaflets on the subject should be attached to matter which had to be read, namely, the vaccination certificate, for both tuberculosis leaflets and infantile leaflets were often mistaken for tracts and thrown into the fire. He suggested that these leaflets be printed on paper of a different colour, and in a different type to the vaccination certificate, but attached thereto, so that they could not be separated.

The **Registrar-General** said that every effort in the direction indicated in Dr. Cope's valuable paper would have his most hearty co-operation. As had been pointed out, any action must originate with the Royal College of Physicians, and the approval of the Local Government Board should be obtained. His Department appeared to afford the best machinery for disseminating the information amongst the classes who were most concerned in the infantile feeding question.

**Dr. Edgar Flinn** said that this paper was especially interesting to him from the fact that he had occasion recently to hold an investigation into the causes of infantile mortality in one of the Unions in the city, and at which the feeding of infants was largely touched upon. The Registrar-General had kindly furnished him with statistics in regard to the deaths of infants in both the Dublin Unions, as well as for the Dublin Registration Area. These statistics were instructive reading. Dr. Cope had suggested an admirable and practical idea with regard to the proper instruction of mothers in the feeding of their young, and it was one that should commend itself—and he felt assured that the suggestions made by Dr. Cope would receive due and careful consideration from his Department.

**Dr. Denham** pointed out that a good deal had been already done on the same lines that Dr. Cope had proposed to the Royal College of Physicians. He himself, as a dispensary doctor, had issued to every patient since 1890 a printed form on the subject, and that pamphlet had been adopted by Dr. Kidd and issued to all the patients in the Coombe Hospital. His experience was that the infantile mortality was caused by the inanition of the mothers, to a large extent, and not by improper feeding. The women in this district all breast-fed their children. With regard to the registration question, every death in Ireland should be certified by a medical man.

**Dr. Herbert Byrne** remarked that up to May or June there was no diarrhœa. The poor people cannot get good milk. They are told to sterilise it, but they cannot do it. They may boil it, but it does not nourish the child then. He thought the cemetery authorities should not, on any account, inter a child registered by a foster-mother. An inquest should be held on such a death.

**Dr. Martley** said he had heard a good deal about the word sterilisation, and, as far as he could make out, it meant boiling. He wanted to protest against the idea of sterilisation being the ultimate goal. It was a splendid thing in its way, like the surgical treatment with antisepsis in place of asepsis. What they really wanted to do was to get the milk pure if they could, but he did not see how they were going to do it yet. If the race was brought up on sterilised milk for a few generations the ordinary germs found in pure milk would kill the infant of two or three hundred years hence. He thought the piece of Indiarubber piping frequently put on the end of feeding bottles had as much to do with killing the children as all the rest put together.

**Dr. Horne** said that, of all places, in Dublin the women took most care of their children. From his experience he believed that at least 90 per cent. were willing to nurse their children, so that the want of nursing could not be put forward as explaining the infantile mortality. Marasmus and inanition were terms used for want of better words, and meant simply nothing. He was of opinion that deaths should not be received unless properly certified, and if a medical officer had not been in attendance an autopsy should be held, whether supplied by Government or Municipal authority. He attributed the mortality—first, to the poverty of the people; secondly, to the state of the houses; and, thirdly, to drink. He looked upon rickets as extremely uncommon in Dublin, compared with Continental and other cities. From the economic point of view they found that the poor mother with a large family was obliged to have recourse to farinaceous foods, and if they got rid of the poverty they would remedy the mortality. Some of the lying-in hospitals had issued printed rules to parents, but they either threw them into the fire, or if they read them they thought they knew better. He thought it would be useless to attach rules to the vaccination paper, considering that in the Sackville-street Vaccine Institute, where there was a better class than in the dispensaries, the people got their papers folded and never read them.

**Dr. Ninian Falkiner** presented the statistics for the total births and deaths of children under one year, with the rate of deaths to 1,000 births, for 1899 and 1900, and average rates for two periods of ten years, the figures for the year 1899 being taken respectively from the Annual Reports of the Registrars-General for Ireland and England. The figures for 1900, being abstracted from the Quarterly Reports, are subject to revision.

### INFANTILE MORTALITY.

*Deaths of Children under One Year per* 1,000 *Births.*

Year 1899.

| | Total Births | Deaths of Children under One Year | Death Rate per 1,000 Births | Average Death Rate per 1,000 Births 1889-98 |
|---|---|---|---|---|
| Ireland - | 103,900 | 11,200 | 108 | 101 |
| England - | 928,646 | 150,975 | 163 | 151 |

Year 1900.

| | Total Births | Deaths of Children under One Year | Death Rate per 1,000 Births | Average Death Rate per 1,000 Births 1890-99 |
|---|---|---|---|---|
| Ireland - | 101,262 | 11,014 | 108 | 102 |
| England - | 926,304 | 142,943 | 154 | 153 |

**Dr. Thompson** said that from the cases in his hospital he was led to believe that the mortality was in the hand-fed, and not the breast-fed infants. He found out that the printed instructions distributed by the lying-in hospitals were never read, except, perhaps, when the baby was really sick. He had had short instructions typed telling how to feed the baby at different periods, and in some cases with good effect. The difficulty was really the poverty of the patients. He had read, some time ago, of an institution that was started partly by the municipal authorities and partly by philanthropy, whereby sterilised milk was brought in from the country and distributed to the deserving poor. In some parts of the city here, where the people were really very poor, an institution of that sort might really help to decrease mortality.

**Sir Charles Cameron** observed that if they took the death-rate of the Dublin Registration Area it was considerably below that of the 33 large towns of England, whereas if they took that of Dublin city alone it was but slightly lower. It must be remembered that in this country only about one-fifth of the population resides in towns, whereas more than two-thirds reside in towns in England. A good deal of the unhealthiness arose from general insanitary conditions, more especially exposure to cold, and he ventured to say that there was not a more under-dressed juvenile population in any equally cold country. It was similarly with infants; they were not kept sufficiently warm in the winter, and many of them died from respiratory diseases. Drunkenness was increasing in women, and how could the milk of women—underfed and drunken—be wholesome for children? He had seen the milk in poor homes kept under circumstances where it was impossible to preserve it. It was purchased only once a day, and the milk given to infants was often that of the previous night.

DR. COPE, replying, referred to Dr. McWeeney's plea for autopsies. One pathologist found that catarrhal conditions of the intestine, with enlargement of the glands without tubercular deposits, often caused considerable wasting. It would be open to registrars, when giving the vaccination paper, to tell the people that these instructions were on the paper. With regard to the statement that only ten per cent. were hand-fed, if they saved that ten per cent. it would be doing a good deal. As he had mentioned in his paper, dispensaries and lying-in hospitals had already issued pamphlets on the subject.

The following resolution on the subject was proposed by Dr. Cope, and seconded by Dr. Craig, and adopted and forwarded to the Council of the Royal Academy of Medicine:—

"That the Section of State Medicine of the Royal Academy of Medicine, Ireland, believing that a large number of infant children are dying in Ireland, as elsewhere, annually, from improper or imperfect feeding, are of opinion that instructions as to the proper feeding and hygiene of infants should be issued to the people, and that the Section, having considered by what possible means this undertaking should be carried out, consider that the assistance of the Registrar-General for Ireland and the Local Government Board is indispensable, and that the Council of the Royal Academy of Medicine be asked to appoint a sub-committee to confer with the Royal College of Physicians, the Registrar-General, and the Local Government Board, as to the best means of preparing the proposed regulations and distributing them to the public."

### *Tuberculosis amongst Irish Dairy Cattle.*

**Professor E. J. McWeeney, M.D.**, read a paper on the prevalence, character, and bacillary richness of tuberculous lesions amongst milch cows. His observations referred to the highest class of animal, living under ideal hygienic conditions, and kept on grass during the summer. Towards the end of lactation they were tested with tuberculin, and subsequently sold for slaughter. A careful *post-mortem* examination was made, and the results controlled by the microscope, bacilli being patiently sought for in exudates and in sections of tissue. Out of 88 animals, 46 were found tuberculous and 40 free; 2 were doubtful. The commonest seat of the lesions was in the posterior thoracic and bronchial lymph glands, which were more or less affected in 90 per cent. of the tuberculous animals. The lungs were attacked in 63 per cent., the liver was much less frequently implicated, with only 8 per cent. of cases, whilst the hepatic lymph glands were attacked in 12 per cent. The alimentary canal was very rarely affected, not one case of tubercular ulceration of the intestines being noticed, and only one case of tubercular disease of the mesenteric glands. The retro-maxillary lymphatic was once affected. Of the serous membranes, the pleura was attacked in 14 per cent., including two cases of *Perlsucht* or "grapes." The peritoneum showed lesions in only 5 per cent. The spleen was never engaged, and not a single case of tubercle of the udder was observed. The disease was generally chronic and localised, and the necrotic areas more or less calcified, but in 8 per cent. the distribution was extensive, and in the same number there were miliary tubercles surrounding older obsolete areas. The portal of infection seemed to have been through the respiratory passages in the vast majority, and the relative freedom of the intestinal tract was very remarkable. Tubercle bacilli were extremely scarce, and the speaker confessed his inability to understand how such extensive tissue changes, both progressive and regressive, could be due to such small numbers of the pathogenic organisms; even in early lesions they were hard to find. Material in which he had failed to demonstrate the bacilli microscopically had conferred on guinea-pigs acute tuberculous disease, with numerous tubercle bacilli. After referring to the work of Adami and Martin, the speaker thought it unlikely that there was any danger to be apprehended from the meat or milk of such animals as those he had had under observation, and concluded by saying that he was at present engaged on experiments with the object of ascertaining whether the milk of animals that reacted to tuberculin, but were not otherwise demonstrably tuberculous, contained the specific bacilli.

**Sir Charles Cameron** said the subject was of great importance in public health, as a great number of animals were destroyed, which, if unnecessarily, would be a great waste. He had never taken an extreme view on the subject of tuberculous animals, and unless he saw the disease in a very advanced stage, the lungs infected, and the animal wasted, he did not condemn the animal. Many Medical Officers of Health condemned an animal if there was tuberculosis in any of the organs.

The Section then adjourned.

## IODIPIN IN SYPHILIS.

**Iodipin** is a combination of iodine and sesame oil. It is an easily absorbable organic substitute for the iodides, and is free from the unpleasant secondary effects of the latter. Dr. R. Chernbach (*Medico*, May 1, 1901), hospital physician in Huse, Roumania, reports two very severe cases of syphilis in which he used iodipin. The first case was a woman of twenty-eight, who had deep purulent and ill-smelling ulcerations on the left cheek and on both feet. The patient was weak and emaciated, and her general condition was very bad. Yellow mercurous iodide and potassium iodide were ordered internally, and the ulcers were treated locally. After eight days the mercury had to be discontinued on account of stomatitis making its appearance. Treatment with iodipin was then commenced. For two weeks the patient received a daily hypodermic injection of 5 cc. (75 min.) of the 25 per cent. preparation. On leaving the hospital her general condition was good.

The second case was a girl of sixteen, affected with the severest kind of cachectic and destructive syphilis. She had large ulcerations on the fauces, pharynx and tonsils. The uvula was completely destroyed. Theanæmia was severe. She was given yellow mercurous iodide, and the 10 per cent. iodipin was injected hypodermically in doses of 10 cc. (2½ drams). After three weeks' treatment the ulcerations in the throat were healed. The general condition was satisfactory, and the anæmia was improved.

The author says that (1) the injections were practically never painful; (2) the local reaction was very slight; (3) the action of the iodipin became noticeable in a very short time and in a most remarkable manner; (4) at no time did the injections cause a rise in temperature.

## *Fracture of the Pelvis by driving in of the Floor of the Acetabulum, Perforation of the Urinary Bladder, and Bruising of the Internal Iliac Muscle.* By MM. M. MAITLAND and P. POILLET. Translated from the *Lyon Médical* by GEORGE M. FOY, M.D., F.R.C.S.I.; Surgeon to the Drumcondra Hospital, Dublin.

WE have had to notice, in the practice of Professor Ollier, a well-marked case of an unusual fracture of the pelvis by the floor of the acetabulum being driven in, the bladder perforated, and the internal iliac muscle bruised by a fall on the great trochanter.

M. C., aged sixty years, a day worker, was, on the 15th of September, 1900, admitted to l'Hôtel Dieu, Lyons, under the care of Professor Ollier, for a fracture of the pelvis, which occurred under the following circumstances:—The patient was on a ladder at a distance of eight metres from the ground, when he missed his foot and fell on the hard ground and some broken stones.

The shock was felt all over the right side, but principally on the trochanter. Immediately he complained of an intense pain in the pelvis, immediate loss of movement, sharp bleeding into the tissues around the trochanter, but bleeding of neither the nose nor the ears.

The patient was put to bed, and immobolised in splints; the pain was greatly lessened, but did not wholly die away.

The next day the symptoms were slightly different. The trochanteric region and the inguinal femoral were greatly swollen. Since the accident the patient had not made water, and when a catheter was passed into the bladder it drew off a small quantity of urine, mixed with blood.

The patient was admitted to hospital 24 hours after the accident, very weak, but quite conscious. On examination the swelling was found to commence within the pelvis, and to occupy Scarpa's triangle, and to be bound down by Poupart's ligament. On palpation the swelling gave a distinct sense of fluctuation. The skin is healthy in this region. At the point of the trochanter the swelling is not so great, but there is a large ecchymosis. Measurement shows that the right leg is shorter than its fellow by three centimetres, and it is slightly abducted.

Examination of the part is made difficult by the swelling of the tissues. Withal, we found no evidence of injury to the great trochanter. No voluntary movement of the leg is possible. Passive movements, flexion, abduction, and adduction were possible, but very painful, and accompanied with a crackling noise, most intense at the point of articulation of the thigh bone. Sensibility is preserved in both leg and thigh.

Examination of the pelvis detected two fractures—one at the middle of the iliac crest, and the other at the horizontal ramus of the pubic bone. In these two places the crepitation and the abnormal mobility are well marked. At the place of the pubic fracture the two fragments are found to over-ride each other. Rectal examination, which is extremely painful to him, confirms our opinion as to the disposition of the pubic fragments, and it tells that the floor of the acetabulum is pressed inwards towards the cavity of the pelvis. In the sub-pubic region there is a well-marked puffiness and protrusion of the soft parts, which cannot be due to an over-distended bladder, for the viscus is empty, the catheter drawing off some blood and a little urine blood-tinctured. The belly is distended, painful on pressure. Twice the patient vomited his food. There were no signs of any injury to the skull.

Fracture of the pelvis by a blow on the floor of the acetabulum, with perforation of the anterior wall of the urinary bladder, was the diagnosis. The patient was in an unpromising condition for operation. However, it was considered necessary to give exit to the extravasated urine, and insert a drainage tube at the site of the fracture in the vicinity of the wounded bladder. M. Gallois operated. Opening the abdominal cavity, he emptied out a quantity of blood and urine that had collected between the abdominal parietes and the parietal fold of the peritoneum, which it had separated almost to the umbilicus. This cavity communicated with a large pocket of blood which occupied the right iliac fossa, and was prolonged under Poupart's ligament to the apex of Scarpa's triangle. Portion of the escaped blood ran parallel to the ligament, and formed finger-like clots. Blood, blood-clots, and urine filled the cavity of Retzius, and pressed on the base of the bladder. All the cavities were plugged with gauze, and care was taken to separate the fractured acetabulum from the wounded bladder. When the bladder was washed out and examined, a perforation of the viscus was found close to its base. Suture in the position appeared impracticable. It was decided to drain it by leaving a sound in to permit of free discharge.

On the following day the patient felt better; injections of serum and caffeïn were given several times. Urine escapes freely by the sound, and is passed in great quantity. A Bounch apparatus was applied, which the patient said gave him great relief. He complains of pain at the seat of fracture. The temperature rose to

100·8° F. His condition remained unchanged during the day, but during the night he became delirious, pulled out the catheter, and tried to pull off the dressings. The next day found him worse, and that evening he died.

The autopsy, performed twenty-four hours after death, presented the following appearance:—The peritoneum is normal. The bladder was small, shrivelled, and close to its base had a punctured hole as big as a fifty-centime piece, just in front of a fold of peritoneum. The mucous membrane is bloodshot throughout. A sharp splinter of bone, broken off from the horizontal ramus of the pubis, had caused the perforation of the viscus.

Dissection of the pelvis and of the upper extremity of the femur showed that the great trochanter and the neck of the bone were intact. But the head of the femur was driven with such force against the acetabulum that it smashed the floor of the cavity and produced a stellate fracture, the rays passing from the centre to the circumference. As stated above, the pectineal crest of the pubis was broken. We found a T-shaped fracture—one fissure ran upwards and backwards, dividing the ilium into two equal portions, of which one was above and the other below the brim of the true pelvis. In the os pubis the fragments over-rode each other.

The internal iliac muscle was pressed and ground by the fragments. It consisted of a mass of bruised muscle, clots of blood, effused, fluid blood, from injury to the internal iliac and transversalis arteries.

The second part of the fracture, extending from the centre of the acetabutum, extends to the obturator foramen. The inner fragment of the horizontal ramus of the pubis forming the vault of the obturator groove was driven inwards and upwards and transfixed the urinary bladder.

A third fissure, running downwards and backwards, divided into two, one running to the base of the ischium, and the other to the base of the os pubis.

The intestines and kidneys were uninjured, as were all the vessels other than those named.

The case presents three points for consideration—the fracture of the floor of the acetabulum; perforation of the urinary bladder; bruising of the internal iliac muscle.

The majority of the authors that have written on fractures of the pelvis remark that fracture of the floor of the acetabulum is very rare and unusually difficult of diagnosis, and if the result of an accident they look on it as immediately fatal. If the injury is not quickly fatal it is considered to be a fracture of the neck of the femur and contusion of the hip. Tardieu arrived at the conclusion that fracture of the acetabulum thus produced is "*fracture par contrecoup*." A. Cooper, Dupuytren, Velpeau, Malgaigne, Moore, Holmes, Tardieu, Lardy, accept this view. Virevaux, the first in his thesis, inspired by M. Ollier, gives a full exposition of the theory, which he supports by thirty-four observations, some of them occurring in his own experience.

The mechanism of the fracture is the object of his studies.

Any violence whatever applied to the face of the great trochanter is transmitted to the acetabulum by the head of the femur. This is an ætiological necessity on which Velpeau is explicit. He writes:—"The head of the femur being spherical, the force of the blow is communicated excentrically to each point of the acetabulum. It follows, necessarily, that the sum of the centrifugal movements is transmitted to the cavity, and is greater than the resistance, a fracture results which divides the pelvis into three parts which correspond to the three parts that form the bone during infancy."

The conditions we find in these cases are impossible of statement. The symptoms of the fracture are—slight shortening, sometimes none at all; rotation of the foot outwards, seldom inwards; facility with which the deformity of position is put right; when placed in position the foot has a tendency to gradually assume the reverse position (Bockel); impossibility of voluntary movements; passive movements possible, but very painful; crepitation at the point of fracture, produced by pressure on the iliac spines; increased width of the trochanteric region; pain on pressure being applied to the trochanter; lastly, signs furnished by rectal examination.

The symptoms we found were such as left no doubt as to the nature of the injury when we made the examination by the bowel. Perforation of the urinary bladder is a complication we must ever expect in such fractures. Rupture of the viscus may be present, and when found fully 76 per cent. of the cases are extra-peritoneal.

Charboreau considers that when the pelvic girdle is burst the pubic fragments are driven inwards and backwards, and so perforate the urinary bladder. In the present case the perforation occurred in the same way as it did in a case reported by M. Routte.

Injury to the bladder adds much to the gravity of the case, and when present death follows almost without exception.

Bruising of the internal iliac muscle, such as occurred in this case, is a condition rarely noticed. Classic writers on surgery are silent on the subject. Voittemier (*Clin. Chir.*) makes allusion to

**such a complication, and Dansac (*Gaz. Med. de Paris*) refers to it incidentally, but attaches no importance to it.**

**We have laid stress on the importance of recognising such a condition as a very serious complication, one producing an enormous hæmatoma which it is very difficult to prevent breaking down into suppuration.**

## THE HOTEL HYDROPATHIC, PEEBLES, N.B.

It is always of interest to hear of a health resort at home which fulfils all the requirements of the jaded worker or pleasure-seeker, for whom the "Bad-kur" has been prescribed. Such a health resort may be found near Peebles, North Britain, where a palatial hydropathic hotel was opened a few years ago with the object of supplying a home "Kur." The building is beautifully situated, overlooking the Tweed from a height of 550 feet above the sea-level. It is fully equipped with baths of various kinds, such as are used at Homburg, Baden, Nauheim, and other foreign health resorts. There are also enclosed "air and sun" baths in the grounds, which are very extensive, and include a cycle course, archery ground, golf, tennis, and bowling greens.

Mrs. George Augustus Sala, who spent some time at the Peebles Hydro in August, 1899, wrote an entertaining account of her experiences under the title "At the German Baths in Scotland." Her bright and sparkling paper has been printed in a very attractive way by Messrs. Maclure, MacDonald and Co., of Glasgow, with the caption "A Souvenir of the Peebles Hotel Hydropathic." The booklet is charmingly illustrated, and gives all the information which an intending visitor could desire.

## CAMPHOR-EATERS.

ACCORDING to the *Indian Medical Record*, October 9th, 1901, the idea seems to prevail amongst the well-to-do classes in India that camphor, taken in small and regular doses, gives a peculiarly clear creaminess of complexion. The habit of camphor-eating is very difficult to cast off, and in many instances it enslaves its victims, for camphor produces a mild form of exhilaration followed by stupefaction. Camphor-eaters have a dreamy, dazed, and very listless air, and in most of them there is an ever-present longing to sleep or, at least, to rest. Extreme weakness follows the taking of regular doses. As to the complexion—if a ghastly pallor is an improvement, camphor certainly produces it.

# SANITARY AND METEOROLOGICAL NOTES.

Compiled by SIR J. W. MOORE, B.A., M.D. Univ. Dubl.;
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## VITAL STATISTICS

*For four weeks ending Saturday, October* 5, 1901.

## IRELAND.

### TWENTY-TWO TOWN DISTRICTS.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending October 5, 1901, in the Dublin registration area and the twenty-one principal provincial urban districts of Ireland was 17·0 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,079,708. The deaths registered in each of the four weeks ended Saturday, October 5, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000:—

| TOWNS, &c. | Week ending | | | | Average Rate for 4 weeks | TOWNS, &c. | Week ending | | | | Average Rate for 4 weeks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sept. 14 | Sept. 21 | Sept. 28 | Oct. 5 | | | Sept. 14 | Sept. 21 | Sept. 28 | Oct. 5 | |
| 22 Town Districts | 20·6 | 19·2 | 18·6 | 17·0 | 18·9 | Lisburn - | 31·9 | 31·9 | 9·1 | 13·7 | 21·6 |
| Armagh - | 27·6 | 13·8 | 20·7 | 13·8 | 19·0 | Londonderry | 11·8 | 14·4 | 13·1 | 9·2 | 12·1 |
| Ballymena | 14·4 | 14·4 | 19·2 | 14·4 | 15·6 | Lurgan - | 22·1 | 26·6 | 13·3 | 13·3 | 18·8 |
| Belfast - | 22·1 | 17·7 | 20·5 | 14·9 | 18·8 | Newry - | 8·3 | 8·3 | 12·4 | 20·7 | 12·4 |
| Clonmel - | 0·0 | 25·5 | 25·5 | 0·0 | 12·8 | Newtownards | 68·0 | 22·9 | 11·4 | 5·7 | 25·7 |
| Cork - | 24·0 | 19·9 | 13·0 | 15·1 | 18·0 | Portadown - | 0·0 | 10·4 | 10·4 | 10·4 | 7·8 |
| Drogheda - | 8·2 | 16·3 | 28·6 | 24·5 | 19·4 | Queenstown | 13·2 | 19·8 | 26·4 | 19·8 | 19·8 |
| Dublin - (Reg. Area) | 22·2 | 23·4 | 17·8 | 19·9 | 20·3 | Sligo - | 4·8 | 9·6 | 19·2 | 4·8 | 9·6 |
| Dundalk - | 16·0 | 12·0 | 16·0 | 12·0 | 14·0 | Tralee - | 10·6 | 0·0 | 10·6 | 31·9 | 13·3 |
| Galway - | 31·1 | 11·7 | 31·1 | 27·2 | 25·3 | Waterford - | 17·5 | 13·6 | 13·6 | 9·7 | 13·6 |
| Kilkenny - | 9·9 | 9·9 | 19·9 | 44·7 | 21·1 | Wexford - | 14·0 | 9·3 | 23·4 | 28·0 | 18·7 |
| Limerick - | 11·0 | 19·2 | 28·8 | 21·9 | 20·2 | | | | | | |

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases registered in the 22 districts during the week ended Saturday, October 5, were equal to an annual rate of 2·6 per 1,000—the rates varying from 0·0 in thirteen of the districts to 10·6 in Tralee—the 6 deaths from all causes registered in that district including 2 from diarrhœa. Among the 100 deaths from all causes registered in Belfast are 2 from measles, 8 from enteric fever, and 8 from diarrhœa. The 22 deaths in Cork include one from whooping-cough, one from simple continued or ill-defined fever, and 3 from diarhœa.

## DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of the Area, estimated to the middle of 1901, is 375,076, being made up of the following:—City, 290,837; Rathmines, 32,589; Pembroke, 25,563; Blackrock, 8,727; and Kingstown, 17,360.

In the Dublin Registration Area the births registered during the week ended Saturday, October 5, amounted to 223—113 boys and 110 girls; and the deaths to 149—69 males and 80 females.

### DEATHS.

The registered deaths represent an annual rate of mortality of 20·7 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the area, the rate was 19·9 per 1,000. During the forty weeks ended Saturday, October 5, the death-rate averaged 26·4, and was 0·1 under the mean rate for the corresponding portions of the ten years, 1891–1900, based on the estimated mean population of the Dublin Registration Area as then constituted.

Twenty-three deaths from zymotic diseases were registered—a number which is equal to a rate of 3·2 per 1,000 of the estimated population, the average rate for the 40th week of the past ten years being 3·8. The 23 deaths are one under the number registered during the preceding week, and include 9 from diarrhœa, 2 each from diphtheria and whooping-cough, and 8 from enteric fever.

Tubercular diseases caused 36 deaths, comprising 21 from pulmonary tuberculosis, 1 from tubercular meningitis, 11 from tabes mesenterica, and 3 from other forms of tuberculosis.

Diseases of the respiratory organs caused 22 deaths, equal to a rate of 3·1 per 1,000 of the estimated population, the average weekly rate for the past ten years being also 3·1. Of the 22 deaths 12 were caused by pneumonia and 9 by bronchitis.

The deaths of 7 children under 5 years of age, of whom 5 were under one year old, including 2 infants under one month, were attributed to convulsions.

One death was caused by epilepsy, and 6 by other diseases of the brain and nervous system (exclusive of convulsions).

Diseases of the circulatory system caused 10 deaths and cancer 6.

Three accidental deaths were registered.

In 12 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 8 children under 5 years of age (including 7 infants under one year old) and the deaths of 2 persons aged 60 years and upwards.

Forty-nine of the persons whose deaths were registered during the week ended October 5 were under 5 years of age (32 being infants under one year, of whom 6 were under one month old), and 38 were aged 60 years and upwards, including 17 persons aged 70 and upwards, of whom 3 were octogenarians.

## STATE OF INFECTIOUS DISEASE IN DUBLIN.

### (1.) Cases of Infectious Diseases Notified to the Public Health Committee of the Corporation.

Sir Charles Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of Infectious Diseases in the City of Dublin, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | |
|---|---|---|
| Week ending | September 14, 1901... | ... 47 cases. |
| ,, | September 21, ,, ... | ... 62 cases. |
| ,, | September 28, ,, ... | ... 72 cases. |
| ,, | October 5, ,, ... | ... 66 cases. |

Of the 66 cases notified in the week ended October 5, 10 were erysipelas, 29 enteric fever, 12 scarlatina, 4 continued fever, 9 diphtheria, and 2 typhus fever.

### (2.) Cases of Infectious Diseases in Rathmines Urban District.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | |
|---|---|---|
| Week ending | September 14, 1901... | ... 7 cases. |
| „ | September 21, „ ... | ... 2 cases. |
| „ | September 28, „ ... | ... 3 cases. |
| „ | October 5, „ ... | ... 3 cases. |

Of the 3 cases notified in the last week, 2 were scarlatina and one enteric fever.

### (3.) CASES OF INFECTIOUS DISEASES IN PEMBROKE URBAN DISTRICT.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Pembroke, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | |
|---|---|---|
| Week ending | September 14, 1901... | ... 7 cases. |
| „ | September 21, „ ... | ... 3 cases. |
| „ | September 28, „ ... | ... No case notified. |
| „ | October 5, „ ... | ... 7 cases. |

Of the 7 cases notified in the last week, 4 were enteric fever, one scarlatina, one measles, and one whooping-cough.

### (4.) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Twenty-six cases of enteric fever were admitted to hospital during the week ended Saturday, October 5; 4 patients were discharged, 2 died, and 68 remained under treatment at the close of the week.

Sixteen cases of scarlatina were admitted to hospital, 11 patients were discharged, one died, and 46 remained under treatment at the close of the week. This number is exclusive of 8 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Six diphtheria patients were admitted, 3 were discharged, one died, and 20 remained under treatment at the close of the week.

The hospital admissions for the week also included two cases of typhus fever, one patient was discharged, and 7 remained under treatment at the close of the week.

In addition to the above-named zymotic diseases recognised as such, 9 cases of pneumonia were admitted to hospital, 4 patients were discharged, one died, and 18 remained under treatment at the close of the week.

## STATE OF INFECTIOUS DISEASE IN BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | |
|---|---|---|
| Week ending | September 14, 1901... | ... 174 cases. |
| „ | September 21, „ ... | ... 169 cases. |
| „ | September 28, „ ... | ... 137 cases. |
| „ | October 5, „ ... | ... 126 cases. |

Of the 126 cases notified in the week ended Saturday, October 5, 56 were enteric fever, 12 erysipelas, 17 diphtheria, 26 continued fever, 6 scarlet fever, 2 puerperal fever, and 7 membranous croup.

## ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, October 5, in thirty-three large English towns, including London (in which the rate was 14·7), was equal to an average annual death-rate of 15·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 14·5 per 1,000, the rate for Glasgow being 14·9, and for Edinburgh 14·2.

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## METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat.* 53° 20′ *N., Long.* 6° 15′ *W., for the Month of September*, 1901.

| | |
|---|---|
| Mean Height of Barometer, - - - | 29·819 inches. |
| Maximal Height of Barometer (30th, at 9 a.m.), | 30·189 „ |
| Minimal Height of Barometer (20th, at 7 15 a.m.), | 28·946 „ |
| Mean Dry-bulb Temperature, - - | 56·6°. |
| Mean Wet-bulb Temperature, - - | 54·4°. |
| Mean Dew-point Temperature, - - | 52·3°. |
| Mean Elastic Force (Tension) of Aqueous Vapour, | ·394 inch. |
| Mean Humidity, - - - - | 86·2 per cent. |
| Highest Temperature in Shade (on 8th), - | 70·7°. |
| Lowest Temperature in Shade (on 1st), - | 43·3°. |
| Lowest Temperature on Grass (Radiation) (15th), | 39·1°. |
| Mean Amount of Cloud, - - - | 63·8 per cent. |
| Rainfall (on 18 days), - - - | 3·686 inches. |
| Greatest Daily Rainfall (on 16th). - - | ·825 inch. |
| General Directions of Wind, - - - | S., S.E., S.W. |

### *Remarks.*

Although warm, September, 1901, was very unsettled, stormy and rainy in Ireland. The weather was much finer in Great

Britain, and particularly in the south and south-east of that country. The mean temperature was about the same as that of September, 1900, but in no other respect did the weather of that beautiful month reproduce itself this year. Only during the first few days did quiet, summer-like conditions prevail in connection with an anticyclone. For the rest, atmospheric depressions, sometimes of great size and depth, swept northwards along the western coasts of Ireland, causing strong S.E. to S. and S.W. winds and frequent rains. At 8 a.m. of the 20th the barometer was down to 28·69 inches at Blacksod Point in Mayo. The duration of bright sunshine was estimated at 125 hours, or a daily average of 4·2 hours.

In Dublin the arithmetical mean temperature (57·7°) was decidedly above the average (55·8°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 56·6°. In the thirty-six years ending with 1900, September was coldest in 1886 and 1882 (M. T.= 53·0°), and warmest in 1865 (M. T.=61·4°) and 1898 (M. T.= 60·2°). In 1900 the M. T. was 57·6°.

The mean height of the barometer was 29·819 inches, or 0·091 inch below the corrected average value for September—namely, 29·910 inches. The mercury rose to 30·189 inches at 9 a.m. of the 30th, and fell to 28·946 inches at 7 15 a.m. of the 20th. The observed range of atmospheric pressure was, therefore, 1·243 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 56·6°, or only 2·2° below the value for August, 1901. Using the formula, *Mean Temp.*= *Min.* + (*Max.* — *Min.* × ·476), the mean temperature was 57·4°, or 1·9° above the average mean temperature for September, calculated in the same way, in the twenty-five years, 1865–89, inclusive (55·5°). The arithmetical mean of the maximal and minimal readings was 57·7°, compared with a twenty-five years' average of 55·8°. On the 8th the thermometer in the screen rose to 70·7°—wind, S.S.E.; on the 1st the temperature fell to 43·3°—wind, N.N.W. The minimum on the grass was 39·1° on the 15th—wind, E.

The rainfall was 3·686 inches, on 18 days. The average rainfall for September in the twenty-five years, 1865–1889, inclusive, was 2·176 inches, and the average number of rainy days was 14·7. In 1871 the rainfall was very large—4·048 inches on, however, only 13 days; in 1896 no less than 5·073 inches fell on 23 days, establishing a record rainfall for September. On the other hand, in 1865, only ·056 inch was measured on but 3 days. In 1900, only ·914 inch fell on but 10 days.

High winds were noted on as many as 14 days, and attained the force of a gale on 5 occasions—the 5th, 8th, 17th, 20th, and 22nd. The atmosphere was foggy on the 2nd. A lunar halo was seen on the 26th, and solar halos were observed on the 5th, 18th, and 26th.

The rainfall in Dublin during the nine months ending September 30th amounted to 18·070 inches on 124 days, compared with 24·394 inches on 156 days in the same period of 1900, 20·948 inches on 138 days in 1899, only 10·968 inches on 112 days in 1887, and a twenty-five years' average of 19·734 inches on 142·8 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was as much as 5·420 inches on 19 days, compared with only ·695 inch only on 4 days in September, 1900. The heaviest falls in 24 hours were 1·225 inches on the 16th, ·880 inch on the 21st, ·710 inch on the 22nd, and ·540 inch on the 7th. At Knockdolian the rainfall since January 1st, 1901, has been 25·105 inches on 119 days, compared with 30·021 inches on 140 days in 1900, 28·440 inches on 139 days in 1899, and 19·688 inches on 124 days in 1898.

Dr. B. H. Steede reports that at the National Hospital for Consumption, Newcastle, Co. Wicklow, rain fell in measurable quantity on 21 days to the large amount of 5·107 inches, compared with only ·904 inch on but 6 days in 1900, 2·411 inches on 12 days in 1899, 1·991 inches on 13 days in 1898, and 3·166 inches on 11 days in the same month of 1897. The maximal fall in 24 hours was 1·010 inches on the 22nd. Since January 1, 1901, the rainfall at this Second Order Station has been 21·753 inches on 121 days, compared with 25·048 inches on 136 days in 1900, and 26·159 inches on 129 days in 1899. The highest temperature in the screen was 66·1° on the 9th; the lowest was 44·1° on the 2nd.

At the Railway Hotel, Recess, Co. Galway, the rainfall was 8·380 inches on 15 days, 1·810 inches being measured on the 7th and 1·020 inches on the 5th. The corresponding figures for September, 1900, were 3·793 inches on 15 days, and for 1899, 4·673 inches on 26 days.

Dr. Arthur S. Goff returns the rainfall at Lynton, Dundrum, Co. Dublin, at 5·03 inches, distributed over 18 days. The greatest daily fall was 1·03 inches on the 16th. The mean temperature in the shade was 57·4°. The screened thermometers rose to 69° on the 28th, having fallen to 45° on the 1st.

In the City of Cork, the rainfall was as much as 7·81 inches on 25 days, or 5·22 inches over the average for September. The rainfall was the greatest recorded in September at Cork within the past 50 years at least.

At the Ordnance Survey Office, Phœnix Park, Dublin, only 2·870 inches fell in September on 21 days.

Dr. J. Byrne Power, D.P.H., Medical Superintendent Officer of Health for Kingstown, Co. Dublin, reports that the rainfall in September at the Climatological Station there was 3·27 inches on 19 days, the total fall since January 1, 1901, being 18·22 inches on 122 days.

# PERISCOPE.

## CANCER OF THE LARYNX.

Three papers on this important subject were read before the American Laryngological Society at the twenty-second annual meeting, 1900. The first, by J. N. Mackenzie, M.D., was a plea for an early diagnosis, depending on the naked eye rather than upon the microscope, combined with a radical operation. The writer lays particular stress on accurate observation and careful study of the naked-eye appearances, which, he says, are quite sufficient for a proper diagnosis. He objects to the removal of a small piece for microscopic examination on the grounds that, first, the bit taken may contain no diseased structures, or at any rate no characteristic structures, and secondly, that as cancer is an undoubtedly infectious process any opening up of the diseased tissues must inevitably give opportunities for further spreading of the disease. He then presses for early and complete operation, and lays down that no operation for the removal of laryngeal cancer can be considered complete if it does not include the excision of the neck lymphatic glands. He also argues that unless the disease is clearly confined to one cord partial laryngectomy is useless, and condemns the endo-laryngeal and scraping operations as incomplete, and not at all in line with the accepted surgical treatment for cancer in other parts of the body.

The second paper, by D. B. Delevan, M.D., is taken up with the consideration of the statistics of laryngectomy, &c. The author has succeeded in making a most complete examination of all the available material, and points out how fallacious it is, so that in fact little reliance can be placed upon the records as at present constituted.

The third paper, by J. Solis-Cohen, M.D., treats of the operative interference, and gives many useful points, amongst which may be mentioned the consideration of whether a preliminary tracheotomy done a fortnight previously does not materially increase the patient's chances by fixing the trachea, and so preventing its descent when

**cut across. He advises that the operation should be performed with the patient in the Trendelenburg position, also that where possible the epiglottis should not be removed. He advocates complete closure of the pharyngeal wound, so that there may be no communication with the trachea, and thus less liability to pneumonia. Feeding by enemata should be kept up for two to three days, and no œsophageal tube kept permanently in place.**

## NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

### *Tabloid of Morphin and Emetin.*

As is well known, ipecacuanha yields about 2 per cent. of crude emetin, which is really a mixture of alkaloids. Paul and Counley have reserved the name of "emetin," or, better, "pure emetin," for a definite alkaloid, derived from ipecacuanha, and forming nearly 70 per cent. of the alkaloidal constituents of that drug. It is this pure emetin which is contained in Messrs. Burroughs, Wellcome, and Company's latest "tabloid" product, the formula of which is as follows:—Morphin sulphate, gr. $\frac{1}{40}$; Emetin, gr. $\frac{1}{80}$. This addition to the list of "tabloid" products will doubtless prove of service in cases where a sedative and expectorant combination is required to alleviate certain forms of cough. One of the products may be allowed to dissolve in the mouth as occasion requires. By the use of "tabloid" morphin and emetin purity and accuracy of dosage are secured. This special "tabloid" is issued in bottles containing fifty.

### *Tabloids for Catarrh.*

Messrs. Burroughs, Wellcome & Co. have prepared new tabloids with the following formulæ:—"Tabloid" quinine and camphor—quinine bisulphate, gr. 1; camphor, gr. $\frac{1}{3}$. "Tabloid" quinine, belladonna, and camphor—quinine sulphate, gr. $\frac{1}{4}$; green extract of belladonna, gr. $\frac{1}{8}$; camphor, gr. $\frac{1}{4}$. Both of these combinations have been recommended as being of value in the treatment of the early stages of catarrh, and from one to five of the "tabloid" quinine and camphor, or from one to four of the "tabloid" quinine, belladonna, and camphor, may be prescribed for a single dose, unless it is preferred to direct one of either to be taken every hour. The drugs are pure and accordingly therapeutically reliable. They are divided into accurate doses, and are presented in a most portable and convenient condition.

# THE DUBLIN JOURNAL
OF
# MEDICAL SCIENCE.

DECEMBER 2, 1901.

## PART I.

## ORIGINAL COMMUNICATIONS.

◆

ART. XV.—*A Case of Dermatitis Gangrænosa.*[a] By J. MAGEE FINNY, M.D., Dubl.; Past President, Royal College of Physicians, Ireland; King's Professor of Practice of Medicine in the School of Physic, Ireland; Clinical Physician to Sir Patrick Dun's Hospital.

CASE.—James B., aged two and three-quarter years, was admitted to Sir Patrick Dun's Hospital on May 4th, 1900, suffering from a number of punched-out circular sores on the face and hairy scalp, and a few similar though larger ulcers on the backs of the wrists and on the nates, and some small ones on the penis, scrotum, and pubes. The sores on admission were covered with a greenish yellow pus, and in one or two only was the pus raised above the edge of the ulcer. After the application of a creolin poultice, the floor of the sores was quite clean and of a deep red colour, with the edges sharply cut, of a similar red colour, which was strictly limited to its immediate neighbourhood. No bullæ were present at any time. The size of the sores varied from the size of a threepenny piece to half-a-crown, the greatest number being about the size of a shilling. Two on the back of the right hand—one over the wrist, and the other over the metacarpo-phalangeal joint of the index finger—were each about the size of a two-shilling piece, while a solitary ulcer over the right trochanter was still larger. Most of the ulcers were discrete, although a very narrow strip of healthy skin intervened, but on the forehead, above the right eye, on the right cheek, and on the left eyelid two adjoining ulcers coalesced, forming an irregular gyrate outline made of two circles meeting. The eyelids were enormously swollen and adherent from the discharge which exuded from between them, and could not be opened so as to examine the eyes; the circular or oval ulcer on the left upper eyelid produced the very strange appearance depicted in a photograph taken at the time. The lips and margin of the alæ nasi were also sore and ulcerated, with considerable tumefaction. The ulcers did not seem to be very painful or very irritable, as, with the exception of those about the mouth, they were not scratched or rubbed by the little patient. The lower limbs were covered with an ill-defined rash, not unlike the staining of measles. The limbs were greatly emaciated, and the skin was rough and loose. The child, when admitted, was very weak and prostrate—not able to turn from side to side. He was greatly emaciated and had a cough; no physical signs of lung disease were, however, discoverable.

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[a] Read in the Section of Medicine of the Royal Academy of Medicine in Ireland, on Friday, November 15th, 1901.

The treatment consisted in giving as much nourishment as could be taken, and of washing with creolin, applying boric acid poultices, dusting the sores with iodoform, and applying a weak chthyol and lanoline ointment to the eyes.

No improvement followed, for although no more spots appeared, and no pus was discharged, there was no evidence of healing, while the skin surrounding the sores on the wrist and hip became of a deeper and more purplish colour.

The child died on May 9th.

The *post-mortem* examination was made by Professor O'Sullivan, F.T.C.D., and revealed general tuberculosis. The thymus gland was caseating; a caseous nodule existed in the apex of the right lung, and similar patches through the left; the bronchial and mesenteric glands were caseous. The tonsils were ulcerated and the cervical glands enlarged and firm. The ulcers on the skin were, in most instances, clean cut, circular, with smooth floor and sinuous edges; the wall in a few cases sloped inwards.

Inquiries as to the family and previous history of this remarkable case revealed that the child's parents were healthy. There was no suspicion of syphilis. There was no illness in the house or among the other children of his family. The patient had been under Dr. Wallace Beatty's care at the out-patient department of the Adelaide Hospital from April 12th, 1900, until admission to my hospital. Dr. Beatty has most kindly supplied me with the notes made of the child's state when he first saw him. "It appeared to be a case of impetigo—a remarkable case. In the suprapubic region there are a number of closely-set, large pin-head sized pustules; also on the skin of penis and prepuce, wrists and backs of the hands." A note taken on May 3rd reads—"Extensive ulceration has set in about the face, the right hip and front of the left knee, consisting of deep, punched-out ulcers, round, with their base covered with pus." There were no bullæ present at any time.

As the eyes were very sore, Dr. Patrick Maxwell, to whom Dr. Beatty sent the child, examined them on April 12th at the National Eye and Ear Infirmary, Molesworth-street. He reports—"There is a diphtheritic-like membrane covering the whole of the left upper eyelid on its ocular surface, and a small corneal ulcer. The right eye exhibits a large corneal ulcer, and a similar membrane involves the edge of the lids." A subsequent note, on April 27th, showed that the left cornea was practically gone, and the diphtheritic membrane was replaced by deep, punched-out ulcers. The great swelling of the lids prevented any lengthened exposure of the eyes for examination.

The foregoing case, then, seems to have been one of originally a pustular rash—impetigo—and when first seen the pustules were of small size, not larger than a large pin-head; that in three weeks' time these pustules were converted into deep and wide ulcers; and that, at the same time, the destructive process was similarly progressing in the eyelids and cornea—a veritable panophthalmitis.

The photographs—which were taken by my resident pupil, Mr. Gibbon FitzGibbon—give a true and graphic idea of the situation and relative sizes and shapes of the ulcers, but fail to convey the deep contrast which existed between the raw meat colour of the floor of the ulcers, the purplish red shade of their edges, and the light fair skin of the body.

It is an example of that rare disease which has been described under various names, and of which very few cases have been published. The earliest account of it was by Dr. Whitley Stokes in Ireland in 1807, under the designation "White Blisters," "Eating Hives," or "Pemphigus Gangrænosus." His cases occurred in children from three months to four years of age. He drew a distinction between it and varicella, although he thought "swine-pock" (*V. Globata*) resembled it in its earlier stages. Jonathan Hutchinson (1882) gives a graphic and exhaustive description of it in *The Med. Chir. Trans.*, Vol. LXV., under the title "Varicella or Vaccinia Gangrænosa," his first case having appeared in *Brit. Med. Journal*, December, 1879. In 1880 Sir Wm. Stokes reported a similar case in THE DUBLIN JOURNAL OF MEDICAL SCIENCE, under the name of "Gangrenous Inflammation following Vaccination," or "Vaccinia Gangrænosa." Dr. Eustace Smith ("Diseases of Children," 1886, p. 49) refers to it "as a dangerous complication of varicella," while the name of "Rupia Escharotica" was applied to it by Fagge in "Guy's Hospital Reports." The most recent designation is given by Dr. Crocker ("Diseases of the Skin," 2nd edition, p. 330) as "Dermatitis Gangrænosa Infantum." This last appears to me, from a study of the reported cases, to be the best, as being wide and comprehensive, and for that reason I have adopted it as the title of my communication, for while it admits the close relationship between it and vaccination, on the one hand, and varicella on the other, it does not limit it to those diseases, as is done by the names adopted by Jonathan Hutchinson, Eustace Smith, and Stokes.

J. Hutchinson, in 1881, adduced the following grounds for connecting the gangrenous sores with varicella and with vaccinia after vaccination, and for pressing the view that it was a modified varicella, viz.:—(1) The co-existence of varicella at the time, and in other members of the patient's family; (2) the severe form does not happen to delicate children more frequently than to robust; (3) the spots occur all together, and the tendency to cicatrise is alike simultaneous, and the cure is rapid; (4) there is constitutional disturbance.

According to Crocker, Mr. Hutchinson no longer holds to his original opinion, and the definition by Crocker of its being a gangrenous eruption following varicella or other pustular eruptions of children will, I consider, be generally accepted and adopted, as he writes—"Any eruption of isolated pustules may be the starting point of the ulcers." He records twenty-three cases, including fourteen cases of his own, of ages varying from three months to three years; the majority (14) were under one year old, 6 under two, and 3 under three years. The ulcerative process was generally, when not associated with vaccinia or varicella, in the lower half of the body, the buttocks and thighs. Sir John Wm. Moore in his "Eruptive and Continued Fevers," 1892, p. 130, speaks of "a remarkable case of the affection in a young lady, who for years suffered from urgent gastric symptoms, apparently of a neurotic origin."

In my case there was no evidence to associate it with either vaccination or varicella. The former had been performed two and a half years before, and there was no varicella in the patient's family or neighbourhood. Indeed, at that time of the year (May, 1900) chicken-pox was not prevalent in any part of Ireland, except in a distant part of County Donegal. This information the Registrar-General, Mr. R. C. Matheson, courteously gave me in reply to my inquiries on the subject. Moreover, Dr. Beatty, who saw the child very early in its illness, describes it as impetigo, attacking the penis and lower parts of the abdomen.

The pathology of the disease is very obscure. The disease is a very rare one, and the opportunities of a full *post-mortem* examination still rarer, as it is not always fatal, and a considerable number of the cases are very mild and recover. It attacks mostly females (Crocker), and, as Hutchinson points out, the subjects of it are not the most feeble. It does not spread in families, nor does it seem to be contagious. Yet its whole characters would indicate a microbic infection in children under certain constitutional conditions. A *Bacillus pyocyaneus* was demonstrated in the ulcers by Ehlers of Copenhagen, but the same was found by Oetlinger in pemphigus and diphtheritic ulceration, and by Neumann in cutaneous hæmorrhages (Crocker). Dr. Eustace Smith (*ibid.*) "has no doubt it is connected with the curious tendency to spontaneous gangrene sometimes met with in children," and Osler (4th Edition of his book on "Practice of Medicine," 1901, p. 75) writes in the same strain—"In delicate children, particularly the tuberculous, gangrene (varicella escharotica) may occur about the vesicle (Hutchinson), or in other parts, as the scrotum."

When one reflects on the vast numbers of children there are who live under the most insanitary conditions, and how common pustular eruptions are among infants and young children—as evidenced by every dispensary and out-patient department of our city hospitals—it cannot but strike one that, in this dermatitis gangrænosa, we are face to face with a most rare and unaccountable condition. The presence of tubercular disease has been noted in very many of the fatal cases, as pointed out by Barlow; and of this constitutional state my little patient is an example, tubercle being found in the thymus gland and lungs. But it cannot, I think, be considered as cause and effect, having regard to the frequency of tuberculosis in children, on the one hand, and to the fact that many cases of gangrenous dermatitis completely recover, and show no sign of tuberculosis before or after the attack.

The presence or not of tubercular disease must, however, have a very decided bearing upon prognosis and treatment, considering the tender age of the patients and the low state of their vitality, as evidenced by the presence of a pustular eruption.

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## ART. XVI.—*Medical Careers.*[a] By THOMAS MYLES, M.D., Univ. Dubl.; President of the Royal College of Surgeons in Ireland; Surgeon to the Richmond Hospital, Dublin.

THE custom of delivering inaugural addresses in this College has of late fallen into disuse for reasons which it is not necessary for me to discuss. I hope you will, therefore, forgive me for saying that I think the present moment is not an inopportune one to depart from the usage of the last few years, and inflict a very short address on you. I do not intend to occupy you for any length of time, nor do I intend to enunciate a number of empty platitudes conveying moral lessons which no one intends to put into practice. My object is entirely a practical one, and that is to lay before such of you as are now approaching the termination of your student days some of the factors which will determine your careers as practitioners of medicine and surgery.

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[a] An Address introductory to the Session of 1901-1902, delivered in the Royal College of Surgeons in Ireland on Saturday, November 2nd, 1901.

The first feeling of the student on obtaining his diploma is one of exultation at the thought that the hideous nightmare of examinations no longer overshadows him. Very few days, however, are sufficient to obliterate this feeling of exultation, which is then replaced by one of considerable anxiety as to what is the best method in which he can set about earning his daily bread, and becoming a useful citizen. Now, speaking broadly, the average young qualified medical man has three courses open to him—first, he may elect to settle in private practice at home, either in city or country, or, venturing further afield, he may settle down in England or the Colonies; secondly, he may elect to seek an appointment under the Crown as colonial surgeon in any of the numerous British dependencies; thirdly, he may elect to enter the medical service of the Navy or Army. I exclude from consideration at the present moment all positions of temporary employment, many of which are, undoubtedly, popular with enterprising young men, such as surgeons on ocean-going ships, travelling in charge of private patients, or temporary service with troops in the field or at home. Now, the choice of any one of these modes of life will be determined partly by the tastes of each individual, and partly by consideration of the relative commercial value of each. There are some men to whom the thought of military discipline and control is repugnant; there are others to whom the uncertainty and precarious income of a civil career are deterrent; but the great mass of the younger members of the profession, in deciding in what field of work they will pass their existence, are undoubtedly influenced by considerations of a purely financial character.

At the present moment, as most of you are aware, our professional world is agitated by the publication of the Report of the Commission appointed by Mr. Brodrick, Secretary of State for War. to draw up a scheme of Army medical reform. Now, before I proceed to discuss this scheme in any detail I want, not only to make my own position as official head of this College, but that of others who may be similarly situated to myself, perfectly clear. It has been alleged that the Medical Schools have boycotted the Army Medical Service, and that in consequence of this boycotting there has been a dearth of suitable candidates for the vacancies occurring in recent years. My answer to that question is a very simple one, and I think you will agree with me in saying that it is strictly in accordance with the truth and the facts of the case. It simply is, that if the Army Medical Service is really made attractive, not all the blandishments or persuasive eloquence of presidents or professors can keep men from offering themselves for vacancies therein. The stress and struggle of competition in our profession are so great that I am convinced that a large proportion of highly qualified young men would embrace, even at a considerable pecuniary sacrifice, the assurance of a certain income under the Crown, if such assurance were not accompanied by very grave disadvantages. Again, let me add to this preamble by stating that in my opinion the profession as a whole owes a debt of gratitude to Mr. Brodrick for the work he has done in this connection. Nothing is so easy as criticism, nothing more difficult than construction, and it is only right and just for me to state that I appreciate fully the magnitude of the task which Mr. Brodrick has taken upon himself. Think of it for a moment. In the midst of a great war, the responsibilities and labours of which would tax the energy and resources of the greatest mind the world has ever seen, Mr. Brodrick, undaunted by his responsibilities, has set himself down to try to reform a service that has been proved to be inadequate to the needs of the Empire. I am sure I will have the sympathy of all when I say that we in this College are sincerely thankful to Mr. Brodrick for the great effort he has made to improve the conditions of service in the Royal

Army Medical Department. But the fact that we are both grateful and appreciative of this great effort does not preclude legitimate criticism, and I am quite sure that no one will welcome intelligent criticism of the scheme more than the author himself. Now, what are the improvements in the proposed scheme as compared with the terms at present in force? First and foremost is the improvement in the examination for admission to the service. The diminished importance that will in future be attached to the elementary scientific portion of the examination, and the increased importance that will be attached to the vitally important subjects of medicine, surgery, &c., are undoubtedly a step in the right direction. Many men who have been qualified for a few years have been deterred from competing in the examinations by the thought that it would be necessary for them to return to the dissecting room and the chemical laboratory, and again furbish up their forgotten stock of anatomical and chemical information, before they had any prospect of success in the competitions. Many of these men were excellent surgeons and physicians, and His Majesty's Army was deprived of their services by the traditions of a bygone age. That particular type of anatomical knowledge which the anatomical examiner, as a general rule, selects as his standard in this subject is very frequently absolutely useless to the practical surgeon or physician, and the disappearance of this anatomical nightmare should be welcomed by every prospective candidate with heartfelt thankfulness.

Another point which undoubtedly will conduce to the well-being of the service is the establishment of an Advisory Board. On this Advisory Board will be four civil medical men—two surgeons and two physicians. The presence of the civil element on the Board should be of great benefit to the entire service. As the civil representatives will be changed at frequent intervals, there is little likelihood of the Royal Army Medical Department lagging behind the times, and it will be at the same time a guarantee to the officers serving that efficient work in any department will not fail to have due recognition.

Again, the scheme provides for the formation of a sub committee, on which the civil element will be represented, for the inspection of the military hopitals at intervals, and for reporting as to their relative efficiency, &c. Moreover, in the all-important matter of pay, the proposed scheme in many points compares favourably with that now in force. Thus, a lieutenant, in the allowances as proposed, receives £323 per annum; a captain, after three years' service, receives £379; a captain, after seven years' service, receives £400; a captain, after ten years' total service, receives £477; and a major, after twelve years' service, receives £587; after three years' further service, he receives £632; and a lieutenant-colonel, after twenty years' service, receives £713. I leave out of consideration the higher positions, because, of course, such positions can be reached only by the few. Again, after nine years' service, an officer has the option of retirement with the gratuity of £1,000.

Now, there can be no question that, so far as the home service is concerned, leaving out of consideration for the moment service in India, the terms of pay set forth in this scheme are undoubtedly very attractive. The young man, say of two or three and twenty, at once on entering the service obtains an income of £323 a year; three years later, when he is 25 years of age, he has £379 a year; at 29 years of age he has £400 a year; at 32 years of age he has £477 a year, and at 34 years of age he has £587 a year; at 37 years of age he has £630 a year; and at 42 years of age he has £713. Beyond question, when one considers the certainty of the income and the comparatively easy life of the Army Surgeon, the terms I have detailed to you compare favourably indeed with those of the average civil practitioner, and I have no doubt whatever that when the terms offered become widely known, and when certain objectionable features, which I will now point out, have been removed, numbers of the very best young men in our schools will eagerly offer themselves for commission in the Royal Army Medical Corps.

The blemishes on the scheme, so far as you are concerned, to my mind are three. These I have already pointed out in a letter to the *Times*, and I believe that they can be modified without diminishing the general efficiency of the whole. The first of these is the uncertainty which exists at present as to the terms under which an officer may retire, who, having served six years in the rank of captain, has failed to pass the subsequent examination. Doubtless through an oversight it appears from the scheme that, while an officer before the examination may retire with a gratuity of £1,000, yet, should he elect to present himself at the examination and fail, he is compulsorily retired without any compensation—in other words, he apparently must risk £1,000 on the chance of passing an examination. I cannot bring myself to believe that this was the intention of the Committee, it is so manifestly unjust and unfair, and I have every hope that, on revision, uncertainty on this point will disappear. The second blemish in the terms appears under the head of paragraph 43 and those following. These paragraphs state that an officer after serving eighteen years is liable to be compulsorily retired with a gratuity of £2,500 in the event of his failing to pass a certain examination. This seems hardly fair. Under the terms at present prevailing a man after twenty years' service retires with a pension of £365 a year. Under the proposed scheme he is liable after eighteen years' service to be compulsorily retired on a pension which cannot be more than £150 a year, and may be very much less. Doubtless the object of this proposal is to weed out from the service incompetent men, and, equally, without doubt, to do so is not only right, but absolutely necessary. My objection to this paragraph is an objection to the assumption that an examination is the best method by which to decide whether a man of 40 years of age or upwards is fit to continue in the service or not. It may be said that there is no other test. To this I would reply that if an officer has for eighteen years discharged his duties efficiently, and has earned the esteem and approbation of his superiors while doing so, failure at an examination should not in itself be sufficient to justify his expulsion from the service.

Surely some method other than that of examination could be adopted for determining the efficiency or inefficiency of officers of mature age.

Now let me say a word about the Advisory Board. My friend, Sir Wm. Thomson, whose distinguished services during the war as chief of the Field Hospital furnished by the munificence and patriotism of Lord Iveagh obtained for him a place on the Consultative Committee, has very rightly drawn attention to the composition of this Board. This little country of ours supplies a very large number, I might almost say a disproportionate number, of the officers serving in all branches of His Majesty's Army, and I think, therefore, we are fairly entitled to some representation on that Board. Under the terms of the present scheme such representation is absolutely impossible. The honorarium assigned to each member of the Board is £200 per annum, and as the Board meets fortnightly, or 26 times a year, it would mean that any Irishman appointed would have to be at least three days in every fortnight away from his home and business. This, of course, practically excludes this country from representation on the Board. In asking to be represented on the Board we are not animated by any feeling that Irishmen serving in the corps would not receive fair play at the hands of a board composed entirely of Englishmen and Scotchmen. Personally I am perfectly certain that any board that the Secretary for War would select would be composed of gentlemen incapable of drawing any unfair distinction between English and Irish officers. At the same time, there can be no doubt that young Irishmen would be more attracted to the service if they felt that in the event of any unjust treatment being meted out to them they had a fellow-countryman at headquarters, to whom they might confidently apply for redress.

It is not necessary for me, nor would time permit it, to enter into a more minute discussion of the details of this complicated scheme, but I would advise each of you who contemplates selecting the Army as his career to obtain for himself a copy of the scheme. which was published at full length in the *British Medical Journal*, to study it carefully paragraph by paragraph, and satisfy yourselves, so far as you can be satisfied, by careful consideration of all these details before you make your choice. The leading daily papers and distinguished military officers speak of the details of the scheme as "concessions" to the medical officers, who ought now to be thoroughly satisfied at last. Surely a more inappropriate term could hardly be found. There can be no "concessions" to you who are not yet in the service; improvement in the conditions of service may be perhaps regarded as concessions to the men already in it, but to you who are not in it the term "concessions" is utterly inapplicable. The Secretary of State for War is not making any concessions to anyone. He is coming into the open market, which is regulated by the laws of supply and demand, and he has simply offered better terms in the hope of getting more men of a better class than hitherto. If the terms are good enough, he will get plenty of good men; if they are not, the service will remain undermanned as at present. It must be obvious to anyone that the shape the scheme will ultimately assume will be determined by the number of candidates who offer themselves now. If a large number of candidates of good class come forward the scheme will be unamended. If the candidates are few the necessary changes, will, I believe, be made, and a career of honour and usefulness will again be open to young Irishmen.

Now let us leave aside for the moment the Army Medical Service, and turn our attention to civil practices at home or abroad. At the present moment the men practising in Ireland may be divided into two classes—those who hold poor law appointments and those who do not. The poor law appointments consist of several grades. First, what one might call the apex of the pyramid, the medical representative on the Local Government Board. And here let me say that at no time within the knowledge of living man has that position been filled by one more in sympathy with the great body of poor law medical officers than by its present distinguished occupant, Dr. Thomas Stafford, a Fellow of this College, to whose initiative and sympathetic co-operation are largely due such ameliorations of the lot of the dispensary doctor as have been granted during the last few years. Next in rank come the inspectors under the Local Government Board. As the inspectorships are few and the poor law medical officers are many, the chance of any one medical officer attaining this position of comparative ease and affluence is not particularly rosy. Next in rank to the inspectors come the medical officers to the poor law infirmaries, and under that again is the great mass known to the public under the generic title of dispensary doctors. Now, the ambition of every young medical man who starts in the country districts is to obtain a dispensary, and the amount of energy expended and the amount of electioneering skill displayed in obtaining one of these appointments are quite disproportionate to the value obtained. One would imagine from the eagerness with which such positions are sought that they were very valuable. As a matter of fact, nothing but the timidity and unwillingness to seek their fortunes outside the shores of this little island, which characterises too many of our countrymen, is responsible for this insane competition for the position of a dispensary doctor. He receives a salary which varies from £100 to £150 a year, and for this, day and night, for 365 days in the year, in leap year 366 days, he is at the absolute disposal of the public. He has charge of an area sometimes 20 miles in extent. In all weathers, at all hours of the day and night, no matter how weary he is after his day's work, he must, on receipt of the red ticket—the well-known "scarlet-runner"—leave house and home, and minister to the wants of the suffering poor. He must, perhaps, drive long distances in snow and wet. He may find it necessary to leave his horse behind him, and traverse the side of the mountain before he can reach some lonely house on a remote country side. He may, as I know occurred to one of my pupils on the western seaboard, who was caught in the mist and fog of the mountain side, have to pass the night under the shelter of the rocks there and wait for the friendly daylight to appear, lest in the darkness he should stumble over some frightful precipice on to the rocks below. Should he fail to attend promptly to any call sent him, he is liable to be summoned before that awe-inspiring body, the dispensary committee, and to be informed that if he cannot mend his ways his services will be dispensed with and somebody else put in his place.

This is no fancy picture I have drawn. I will read you an extract from a letter written by a poor law medical officer, a university graduate, a man of culture and refinement. He says in it:—"We have no pay practically, no holidays. We are always on duty. We have no pension. We have no promotion. Consequently, every day spent in such a service is one day worse, which, I think, makes it fairly rank as the very worst service of any kind in the world. For any other service leads a man to promotion or pension. In addition, the fact of a man being in this service, as you know, lowers his social status. Everything points to it being a service to be shunned. On the other hand, what are its attractions? I fail to see a solitary one except that a man is working in his own native country, for private practice in Ireland's remote corners is paid chiefly in bad debts. This is truly a Hibernian remark, but, nevertheless, true, for the money is not in the country. It cannot be an attraction to be under such uneducated Boards of Guardians as now exist, who delight in lowering the dignity of a medical man." The dispensary doctor, as my informant points out, has no pension and has no holidays, save in a few instances, as in the North Dublin Union. Except when he is ill he must pay his own substitute. His salary is entirely absorbed in paying rent for his house and in keeping the horse which is necessary for the discharge of his duties. I know of one case where the worn-out dispensary doctor, unable to get a retiring allowance, died of exhaustion on the roadside, worn out by old age and hardship.

The whole Irish poor law service is, in my opinion, one to be shunned, and I cannot conceive how self-respecting men can offer themselves for vacancies in such numbers as they do. The service is degrading to the medical officer and demoralising to the public. God forbid that I should say a word which would in any way diminish the medical skill and attention paid to the suffering poor, but I protest emphatically against the abuse of dispensary charity which prevails in many districts of the country. Men who can well afford to pay for their medical advice are permitted to avail themselves of the ill-paid services of the poor law medical officer, and this same medical officer knows only too well that refusal to give his services when called upon in such cases will be followed by very unpleasant consequences to himself and those dependent on him. One would imagine from the keen competition with which these appointments are sought that there was no other outlet for the energy of our young medical men. I have before me a letter from one of my pupils, which reads as follows:—"Do you know of a man who requires an assistantship? I am giving £120 indoors; the work is not heavy. I can offer a very comfortable position, and one that would give good experience of general work to a man recently qualified." Surely such a position, with all its future possibilities, is far preferable to the life of a dispensary doctor in a remote country district of Ireland. The dispensary appointment leads to nothing but a life of servitude; the other opens up a vista of success in one of the large towns in England or subsequent settling down in one of the Colonies. If my voice can have any influence with you, let me beseech you not to rush eagerly into poor law appointments.

My southern countrymen, I know, possess many attractive qualities; but there is one quality that is found better developed amongst the northerns, and that is the quality of personal independence and self-reliance. I would say to you, be self-reliant, be independent, and take my word for it that no man who knows his work, and is willing to do it steadily, honestly, and, above all, soberly, will go to the wall. That is the lesson I would inculcate in you all. When you obtain your diplomas do not, as too many of my young friends have done, settle down in some poverty-stricken district, to wait till King Death removes the holder of some dispensary appointment. One advantage of our profession is that a man who knows it thoroughly can, by its practice, earn an honest living anywhere. The hard conditions under which an Irish dispensary doctor lives will never improve if young men like you are willing to accept the terms offered. I am convinced that if all the graduates and licentiates qualified in any one year bound themselves together not to accept dispensary appointments until the terms of service were improved, a very real improvement would soon be effected.

Now, before I conclude, there is one other point on which I should like to address you. It is much the fashion in our country to rail against the British Empire and all that pertains to it, but do not forget that under the flag of that Empire, and thanks to the growth of that Empire, thousands of Irish medical men are making a comfortable living, and holding posts of honour and emolument in every part of the globe. I claim to be a fairly good Irishman, and I do not want you to be anything but good Irishmen, proud of your native land, and ready at any moment to vindicate its good name when the necessity arises; but besides being Irishmen we are something in addition—we are all alike members of a great Empire, entitled to compete for and obtain the highest offices open to members of our profession in all parts of that Empire. Shake yourselves free from the spirit of parochialism, and strike out boldly for the big prizes that are open to you. That there is no position in that Empire too high for an Irishman to hold is so absolutely beyond question that its enunciation is a truism. You will find outside Ireland plenty of kindness, plenty of appreciation, and an abundance of opportunity for the exercise of your talents, that you can never find at home. I am not urging you to emigrate; to do so would, I know, bring down on me the wrath of many well-meaning people, who think that Irish workhouses are not yet sufficiently crowded; but I do emphatically tell you that when you have spent five years in laborious study and have acquired at an expense of not less than £500 your right to practise the profession you have chosen, you should not be content with the miserable pittance offered by an Irish dispensary, when a few hours, days, or weeks will put you in a country where you can begin within a year to earn an income greater than you can hope to make after twenty years of soul-destroying slavery at home.

In concluding an Address such as this it is customary for one in my position to give advice of a semi-parental character about the necessity of living good lives, &c. Well, I do not care to do this, for the simple reason that I hate cant of every kind. But I do feel justified in giving you one piece of advice—keep clear of the drink evil. I do not want you to become total abstainers, nor do I expect the medical student after a successful examination to attend a Quakers' meeting—I know his life-history too well to have any such expectations; but remember that the drink habit, once developed, is absolutely irresistible, and in the struggle and competition of the present day you cannot afford, if I may use a sporting metaphor, to carry any extra weight. And now I thank you all very heartily, and hope that you may find that your examiners and professors are not the dreadful creatures you have conjured up in your imaginations, but are really amiable gentlemen, anxious to give you every fair play, and ever ready to help you in your future career.

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## SUCCESSFUL TREATMENT OF PLAGUE BY YERSIN'S SERUM.

An interesting case of laboratory infection with bubonic plague was that which developed in a young man working in the laboratory of the University of Michigan. Dr. Novy (*American Journal of the Medical Sciences*, October, 1901), in reporting the case, details the extreme violence and rapidity of the onset of his symptoms, and relates the immediately good effect produced by large injections of Yersin's antipest serum. All told, the patient received within twenty-four hours 120 c.c. of serum, 1 dram injected intravenously. The case was plague of the pneumonic type. The patient recovered entirely, although extreme cardiac weakness existed for some time (more than two months) after the disease. The plague bacillus can be detected during life if an infected gland is pierced with a hypodermic needle, and some of its contents used to make cover-glass preparations in cultures. Novy failed in one attempt of this kind because his needle did not actually pierce the small gland in which the plague bacilli were active.

# PART II.

## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

*Diseases of the Stomach and their Surgical Treatment.* By A. W. Mayo Robson, F.R.C.S., Member of Council and Hunterian Professor (1897 and 1900) Royal College of Surgeons of England, Senior Surgeon to the General Infirmary at Leeds, Emeritus Professor of Surgery in the Yorkshire College of the Victoria University, Consulting Surgeon to the Keighley and the Bathy Hospital, Hon. President of the Surgical Section of the International Medical Congress at Paris, 1900, Hon. President of the International Gynæcological Congress at Amsterdam, 1899; and B. S. A. Moynihan, M.S. Lond., F.R.C.S., Assistant Surgeon Leeds General Infirmary, Arris and Gale Lecturer (1899 and 1900) and Member of the Board of Examiners in Anatomy for the Fellowship Royal College of Surgeons of England, Consulting Surgeon Skipton and District Hospital, Senior Demonstrator of Anatomy Yorkshire College, Leeds. London: Bailliere, Tindall & Cox. 1901. Demy 8vo. Pp. 308.

This work took its origin in the Hunterian Lectures delivered by Mr. Mayo Robson at the Royal College of Surgeons of England in 1900. In the expansion of these lectures into the volume before us Mr. Mayo Robson was assisted by Mr. Moynihan, who has been associated with him at the Leeds General Infirmary since 1887. Both authors have evidently given the work a careful revision.

Chapter I. is devoted to anatomical considerations and diagnoses; under this latter heading are discussed the various methods at present in use for making an accurate diagnosis. In connection with exploratory incision as a diagnostic means the authors say:—"In only a small percentage of cases is simple exploratory incision, as a means of diagnosis, necessary or even justifiable, and there can be no doubt but that in some cases it has served as a cloak for carelessness or incompetency." "Exploratory operation is justifiable wherever cancer of the stomach is suspected, for the smaller the tumour the greater will be the hope of a radical cure." Both these statements we strongly endorse. About one-third of this chapter is devoted to gastrotomy—a good account of the operation and the indications for its performance being given.

Chapter II. is a short one on that rare, but none the less interesting, condition—congenital stenosis of the pylorus. Injuries of the stomach are described in Chapter III., while Chapter IV. gives a concise account of the simple tumours found in this viscus. Then follows a chapter on gastric cancer and its diagnosis—the whole subject being fully yet succinctly dealt with. Here the authors state what must be the experience of every operating surgeon—viz., that the exploratory examination does not always give infallible information—many cases of simple ulceration in the neighbourhood of the pylorus with considerable inflammatory thickening and adhesions, and even with enlarged glands, being diagnosticated as malignant, the operator feeling that a posterior gastro-enterostomy as a palliative procedure is all that he is justified in undertaking. The patient being given but a few months at most to live subsequently pleasantly surprises everyone by making a complete recovery—the tumour entirely disappearing.

In dealing with the treatment of cancer of the cardiac end the authors advise that "Gastrostomy should be performed at the earliest moment after the diagnosis is assured." Little wonder the mortality in operators' hands attendant on gastrostomy is so great when we reflect that the operation is generally delayed until the very last stage, when emaciation is extreme and the patient so exhausted that he is quite unable to withstand the shock of any operation. The authors' advice is certainly to be strongly recommended if the operation is to be done at all.

Chapters VII. to XII., inclusive, are devoted to a consideration of gastric ulcer, with its many complications and sequelæ, and their appropriate treatment. Most of our readers are fully aware of Mr. Mayo Robson's views in connection with this subject, and his advocacy of operative interference in certain cases of hæmorrhage from the ulcer. Suffice it, then, to say that in Chapter IX. will be found a convincing expression of the authors' views on gastrorrhagia and its treatment.

Chapter XIII. deals with dilatation of the stomach from other causes, and gives a good description of gastroplication as advocated by Mr. Moynihan. Acute post-operative dilatation is given a paragraph, and the view advanced as regards its causation is that the duodenum is constricted by the superior mesenteric artery, owing to the dragging downwards of the intestines from the loss of support after the removal of the tumour. This was apparently exemplified in one case in which turning over the patient into the prone position relieved the symptoms, and the patient made a good recovery. Such a point is well worth bearing in mind, as hitherto all cases were considered hopeless. Many distinguished surgeons state that if there is no sepsis there will be no post-operative dilatation.

The last chapter is devoted to the various operations performed on the stomach—a list of cases being briefly given after the description of the *modus operandi* of each operation. Here it is interesting to note that the mortality of gastro-enterostomy is a diminishing one. The authors give 40 cases of postero-gastro-enterostomy for simple disease with but two deaths, equal 5 per cent. mortality, while there were four deaths following 19 cases in which anterior gastro-enterostomy was performed for simple disease. On the other hand, where gastro-enterostomy was performed for malignant disease no less than 10 deaths followed out of 23 cases thus operated upon. This is a striking difference in the mortality of an operation performed by the same men for different conditions.

Space prevents further consideration of the volume, but from a careful study of the book we strongly recommend it as the best on the surgery of the stomach we have yet seen and heartily congratulate the authors. The only error in the text we saw was on page 221, six lines from the top, where the word "gastroplasty" should read "gastroplication."

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*A Text-Book of Medicine.* Begun by the late Charles Hilton Fagge, M.D., F.R.C.P.; sometime Physician to Guy's Hospital. Completed after his death and since revised and re-written by Philip Henry Pye-Smith, M.D., F.R.S., F.R.C.P.; Consulting Physician to Guy's Hospital. Fourth Edition. In two volumes. Vol. I. London: J. & A. Churchill. 1901. 8vo. Pp. 1123.

It is with a feeling akin to regret that we observe the gradual paling of the star of Charles Hilton Fagge, even though it be in the bright sunshine of modern medicine as described, and well described, by the erudite and facile pen of Dr. Pye-Smith. "At present," writes Dr. Pye-Smith in his preface to the present edition of this great work on Medicine, "there is scarcely a page of the late Dr. Fagge's work as he left it at the time of his premature death, in November, 1883."

The first edition was not published until January, 1886, more than two years after Dr. Hilton Fagge's death. It consisted of the MS. left by that able physician, together with numerous additions in the second volume by Sir Samuel Wilks, Bart., and Dr. Pye-Smith, who acted as editor. In the second edition, published in 1888, the whole book was revised. The third edition appeared in 1891, having undergone a thorough and careful revision, which brought the work up to date.

The rapid advance of scientific medicine during the past ten years has necessitated another far-reaching revision. Much obsolete matter has been expunged, many additions have been made, and some of the chapters have been re-arranged as well as expanded. For the chapters on heart disease and skin affections Dr. Pye-Smith admits his entire responsibility, as also for the sections on the œsophagus, on actinomycosis, acromegaly, beri-beri, sweating sickness, rubella, peripheral neuritis, Friedreich's ataxia, Thomsen's disease, syringomyelia, insular sclerosis, certain disorders resembling chorea, and diseases of the pancreas and spleen.

The introductory sections on general pathology have been more or less re-written. So also have been those on diabetes, rheumatism, osteo-arthritis, gonorrhœal synovitis, influenza, enteric fever, diphtheria, pneumonia, typhlitis, myxœdema, dysentery, colitis, hepatic disorders, anæmia, phthisis, intestinal obstruction, spastic and atrophic paralysis and tabes.

The section on Diseases of the Lungs opens at page 1020 with a very full and satisfactory account of the physical signs and general symptoms of those maladies. There is an awkward misprint near the bottom of page 1027, where "myxœdema" is printed instead of "myoidema." The error arose through the similarity of the spelling "myœdema" to "myxœdema." It is corrected under the heading "Errata" on page xvii., but unfortunately there is another mistake in the correction, for the page on which the error occurs is given as "102" instead of "1027."

The heading "Diseases of the Lungs" is not satisfactory. It should be "Diseases of the Respiratory Organs"—a more comprehensive term, which would fitly include bronchitis, pleurisy and pneumothorax, the three "diseases of the lungs" which bring this, the first, volume to a conclusion.

Speaking of diseases of the lungs, we read with interest the following passage in the chapter (or section) on "Specific Fevers":—Pneumonia, *i.e.*, acute lobar pneumonia, has strong claims on clinical grounds to rank as a specific febrile disorder. It has its micrococcus. It invades, runs its course, and subsides like a fever. Its symptoms are scarcely more dependent on the hepatised lung, as to time and severity, than are those of enterica on the typhoid ulcers. But cases of contagion and an epidemic course are both exceptional for pneumonia. It is generally believed to arise from common causes, as exposure to cold; it is often secondary to other diseases; and it is not self-protective." This statement of the case seems hardly worthy of so scientific a physician as Dr. Pye-Smith undoubtedly is. Surely the many instances in which pneumonia has of late years been traced to contagion, and in which it has run "an epidemic course," have not escaped his notice. Also, he knows perfectly well that "common causes, as exposure to cold," are merely strong predisponents, rendering an individual an easy prey to the pneumonic infection. The same remark applies to the *rôle* in its ætiology which "other diseases" play. That "it is not self-protective" applies equally to erysipelas, which Dr. Pye-Smith includes without hesitation in a table of the "specific fevers" on page 106. We will be curious to see how the question is treated in the chapter on pneumonia in the second volume when it appears.

A few anachronisms and mis-spellings have escaped revision, such as "Mr. (now Sir Joseph) Lister" (page 45), "Metchnikoff" (page 23), "Ronald Martin" (page 159). But these are trivial faults in so large and valuable a work, for which, from a clinical and pathological point of view, we have nothing but praise.

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*Practical Histology.* By J. N. LANGLEY, M.A., Sc.D., F.R.S. London: Macmillan. 1901. Pp. 340.

THIS is a very excellent laboratory manual of histology. Mr. Langley has had very long and extensive experience in teaching, and there is scarcely anyone who is more competent to give reliable and useful information to a student doing practical work. The book does not differ materially in plan from other works of the same kind, but the methods described are more numerous, and the details more elaborate than is the case in most students' books. The work is intended not only for beginners, but also for those who are more advanced, and it will be found useful by those engaged in original research. The author tells us that "nearly all the methods which are given here have been tried sufficiently often to allow some confidence that the student who follows the directions will not fail of a good result." This is very important, for with a very large proportion of the new methods which are being published every day the student may be pretty sure that he *will* fail of a good result.

We cannot help thinking that in a work of this scope a little more space might have been given with advantage to the use of the microscope, to the choice of an instrument, and perhaps an elementary account of the optical principles on which amplification by the microscope depends. A very short description is given of each of the tissues under examination. It is quite sufficient to enable the student to recognise the different structures, but it does not, and we suppose it is not intended to, describe fully the structure of the tissues and organs. In accordance with this there are no histological drawings in the text, the only illustrations being a few figures of apparatus. The book is, however, as we said, an excellent laboratory manual, and every histological laboratory should have it in its library.

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*Cerebral Science: Studies in Animal Psychology. A Book for Artists, Physicians, and Teachers.* By WILLIAM WOOD, M.D.; Professor of History of Art in the New York University. London: Baillière, Tindall & Cox. Demy 8vo. Pp. 128.

THOSE wretched drudges who earn the hatred of the whole human race by undertaking, for a small stipend, and at much risk of life and limb, and character and comfort, the care of the most helpless and afflicted portion of the species, and who are commonly known as mad doctors, have very large opportunities of judging of spoken incoherence, and, though less, yet considerable opportunities of studying written incoherence, ranging from slight irrelevance up to the extreme of paralexia. Rarely, however, has the general physician discharged upon him so fine a specimen of incoherence as in the work before us. Here are a few samples:—

"Man has brains"—[always?]; "Horse has a clean pair of heels; Elephant has a hand-nose; Simia has hands; Bos has horns and rumen; Squirrel has incisors;

Felis has *griffes*. It is the *retractile claws* that have made Felis king of beasts" [p. 61]. "The brain resembles the creature. The brain of a horse looks like the horse, the brain of a cow has the serene and lowly air of the horned ruminant. A hemisphere of a black-and-tan dog resembles the dog. . . . The brain of a lamb has its forehead raised, that of a cat has its back raised" [p. 21]. "Shall we study faces? Bring, then, to-day the faces of dogs, to-morrow the faces of men, and the next the faces of the gods of Olympus. We must see the mind whole" [p. 20]. From the preface we learn that "we can get power from the horse, attachment from the sheep, firmness and stability from the ox, fidelity from the dog, felicity from the cat, industry from the beaver, success from the elephant, and the art of conquest from the lion." But the author oddly forgets to tell us that we can get absurdity from man, though a great philosopher has long ago pointed out that nonsense is the special product of the human above all other animals. The following outburst concludes the preface:—"Happy are the students. The *hautes études* for the new century are astronomy, botany, ærostation, cerebrology—there is enough to do." Yes! too much to waste any more time over this stuff.

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*Atlas and Epitome of Special Pathologic Histology.* By Docent Dr. Hermann Dürck. Authorised translation from the German. Edited by Ludwig Hektoen, M.D. With 60 coloured plates, containing 123 figures. London and Philadelphia: W. B. Saunders and Co. 1901. Pp. 192.

This volume contains a description of the pathological histology of the liver, urinary organs, sexual organs, nervous system, skin, muscles, and bones. It completes the special pathological histology. A volume on general pathological histology is promised to appear shortly.

Our readers will remember that not long ago we called their attention to the first volume of this work, in which the morbid histology of the circulatory and respiratory organs and the gastro-intestinal tract was treated of. We then expressed our high appreciation of the beauty and fidelity of the drawings, and of the general usefulness of the work. An examination of the second volume has confirmed us in these opinions. We meet in it the same artistic excellence in the illustrations and the same judgment shown in their selection as we found in the first volume. The text is short, but gives a sufficient description of each of the conditions figured to make a study of the drawings intelligible and instructive. The translation—if we can reconcile ourselves to the American dialect—is good. The work is well brought out, and we think it would be hard to find a more handy and practical Atlas of morbid histology than this work of Dr. Dürck. As such we would cordially recommend it to both students and practitioners.

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*Nervous and Mental Disease*. By ARCHIBALD CHURCH, M.D.; and FREDERICK PETERSON, M.D. Third Edition, thoroughly revised. London and Philadelphia: W. B. Saunders and Co. 1901. Pp. 869.

THIS book, the authors tell us, has been written for medical students and practitioners. It makes no claim to be other than a carefully prepared text-book. An attempt has been made to present the facts clearly, directly, and with brevity. The first part of the volume, on nervous diseases, is by Dr. Church; the second, on mental diseases, is by Dr. Peterson. Each author is solely responsible for the work of his own department. The book has met with a very favourable reception, and in the present edition the entire work has been revised, in part re-written, and much new matter and many additional figures and diagrams have been added.

The part on nervous diseases is divided into eight parts, each being further sub-divided into several chapters. The parts are—Examination of Patients, Diseases of Cerebral Meninges and Cranial Nerves, Diseases of the Brain proper, Diseases of the Spinal Meninges and Spinal Nerves, Diseases of the Cord proper, Diseases of the General Nervous System, with known anatomical basis (such as multiple sclerosis, syphilitic disease of nervous system), Disease of the Nervous System without known anatomical basis, and Symptomatic Disorders (such as neuralgia and disorders of sleep).

The treatment of the different subjects is highly judicious and practical. The descriptions are short and pointed, and it is always easy to grasp the essentials, and to separate them from those matters which are less important. The numerous excellent figures which illustrate the text add greatly to the usefulness of the work.

The part on mental diseases is divided into ten chapters, in which the general ætiology, symptomatology, and treatment of insanity are first described, and then in successive sections each kind of mental disorder is specially considered. The descriptions here also are good, and give all that the general practitioner requires to know.

On the whole, we can highly recommend this book to the attention of all those who want a moderate-sized book on nervous diseases, complete and thoroughly up-to-date.

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*Burdett's Official Nursing Directory*, 1901. Containing an outline of the principal laws affecting Nurses, a classified list of Nurse Training Schools in the United Kingdom and Abroad, Nursing Institutions, &c., and a Directory for Nurses. Compiled and edited, with the assistance of a small Committee of Medical Men and Matrons. By SIR HENRY BURDETT, K.C.B. Fourth year. London: The Scientific Press. 8vo. Pp. 409.

OUR notice of this year's Nursing Directory has been delayed, and we hope any nurses who now read it will be induced to send their names to the acting editor at once. The Directory has been issued in a new form, and at the reduced price of 3s., particulars of the various Hospitals and Training Schools having been omitted and published separately at 2s. We trust this may lead to a large demand for both works, and we earnestly urge all nurses to help the editor to make the Directory the full and authentic record it should be—saving both doctors and matrons the trouble and delay of reference to training schools and institutions. If applications for nurses' posts were put aside when their names do not appear in this list the value of public acknowledgment of their status would be realised.

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## *Downpatrick District Asylum. Thirty-first Annual Report (for the Year* 1900).

Dr. Nolan is to be congratulated on having brought his asylum to a state which is obviously highly creditable, and his report handles most of the important subjects connected with asylum administration in a manner which shows a thorough grasp of his work. The report is illustrated with attractive photographs of the asylum and its wards, and this adds to the cheery effect produced by the very business-like and clever text. We note that the method of discharge on trial—singularly neglected in most districts in Ireland—has been adopted here with success. Twelve deaths out of sixty-one (say 20 per cent.) were due to phthisis—a lower proportion than is to be found in many Irish asylums. Dr. Nolan publishes a very useful summary of the cases under treatment for ordinary medical and surgical diseases in the asylum infirmaries during the year. His report further contains two appendices. One deals with the prevalence of dysentery in the asylum and the means taken to check its spread. It is rightly claimed that the recommendations made in the recently-published report of Drs. Mott and Durham to the London County Council on this subject had been already anticipated at Downpatrick. Indeed, the last-named document is rather disappointing, inasmuch as it gives no explanation which can be regarded as satisfactory for the special prevalence of dysentery in asylums—a fact which is quite incontrovertible, though it may at times and places suit the convenience of the authorities to blink it. Dr. Nolan has had the courage to point out that dysentery prevailed in his asylum long before he took charge of it, and that, although in a decreasing degree, it continues to be troublesome. The second appendix deals ably with the question of provision for chronic lunatics, and leaves the proposal unfortunately suggested in the Local Government Act of a special cheap asylum for this class without a leg to stand upon.

We are glad to observe in the Inspector's Report an appreciative notice of Dr. Nolan's assistant, Dr. Starkey, and a commendation of the system adopted of case-taking, whereby every case is noted not merely occasionally but at stated intervals. Sir G. O'Farrell also notes that systematic training of the nurses and attendants, with a view to their examination and certification, has been adopted. On the whole, it is evident that the Superintendent of the Downpatrick Asylum is determined to keep that institution well to the front, and that he is fortunate enough to have a sympathetic and appreciative committee.

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### *Derby Borough Asylum. Twelfth Annual Report (for the Year 1900).*

This excellent report shows a continuance of the good work for which Dr. Rutherford MacPhail is so well known. The following remarkable case (the first suicide which has occurred in the history of the asylum) is well worthy of record:—"A female patient, in the restless, purposeless excitement of melancholia, tore out her tongue and threw it on the floor by the unaided use of her fingers. There was extensive bleeding, which was soon controlled, but the shock was severe, and, being handicapped by a diseased heart, she died 42 hours afterwards. . . . It was, unfortunately, impossible to prevent the other patients from hearing the details of a case of this sort, owing to the publicity given it by the local press. During the succeeding few weeks, four of my actively suicidal patients told me they had tried, without success, to pull out their tongues." We sympathise heartily with Dr. MacPhail in this horrible case—a case which could not be foreseen or provided for. The out-of-the-way methods of self-mutilation, as of suicide, are happily rare, for they are quite impossible to guard against. Thus we have known a patient bite off almost the entire lower lip, and Dr. MacPhail's case recalls a case which occurred in Dublin last year, and which also terminated fatally, in which a patient suffering from puerperal insanity in her own home tore away the perineal body, laying open the rectum and the vagina as far up as the posterior *cul-de-sac*.

The cost in English asylums has been generally high for the year 1900. Calculated as it is done in Ireland, and including ordinary repairs and rent, and excluding incidental receipts, the cost in Derby appears to have been 13s. 5⅜d. per week, or £32 13s. 8d. per *cap.* per annum for maintenance alone.

We observe from the Lunacy Commissioners' report at this institution that those astonishing officials are appearing in a new capacity—that of emendators of the English language. They say:—"We have seen every patient who is *borne* upon the books." If this is an endeavour to return to the language of the early seventeenth century, we can only say it harmonises ill with this very nineteenth-century sentence:—"No nurse or attendant has *left* since the last visit for ill-usage or roughness towards a patient"—where the use of the verb "leave" as an intransitive is a vulgarism fit for Sarah Gamp or Betsy Prig.

*Studies in Human and Comparative Anatomy.* By WOODS HUTCHINSON, A.M., M.D.; Professor of Comparative Pathology and Embryology in the University of Buffalo; formerly Lecturer on Diseases of Animals in the Medical Graduates' College and Policlinic, London. Edited by Dr. E. Blake. London: H. J. Glaisher. 1901. Pp. 340.

THIS is a very interesting and instructive book, and will well repay perusal. The subject of the pathology of the diseases of both men and animals is so vast that to treat the subject systematically and fully would be a very difficult task—at any rate it could not be accomplished in any but a work of the largest size. Dr. Hutchinson makes no attempt to write any such handbook; his work rather consists of a number of essays on pathological matters, written by one who, in addition to possessing a sound and extensive knowledge of human pathology, is also thoroughly acquainted with the diseases of animals. His view is, therefore, much wider, and the facts and references at his disposal much more extensive, than would be the case were he a human pathologist pure and simple. He shows us how much light on the morbid conditions of man may be derived from the study of disease in animals.

The whole work deserves careful perusal. We will, however, refer to only a few points. Dr. Hutchinson has by measurements and tracings carefully examined the shape of the human chest under varying conditions, and shows clearly that the well-built, healthy chest is characterised by width, while (contrary to the usual nomenclature) the typical "deep" chest—*i.e.*, the chest whose antero-posterior diameter is large when compared with its lateral, belongs to the phthisical person.

Another specially interesting point in the work is the doubt which the author throws on the transmissibility of tuberculosis from cattle to man—thus anticipating Koch's celebrated paper by many months (this book was written about a year ago). At the same time he wisely adds that, till we are absolutely certain on this subject, no precaution should be relaxed.

A subject particularly interesting to physicians is that discussed in Chapter VII.—whether the blood-vessels of the skin have any power of promoting the circulation of the blood. He shows that unless we admit some such power it becomes impossible to explain the beneficial effect which some kinds of baths, such as those of Nauheim, exercise on the heart and the circulation as a whole.

The book is excellently printed, so that it is a pleasure to read it.

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*Purulent Nasal Discharges.* By HERBERT TILLEY, M.D., F.R.C.S. Second Edition. London: H. K. Lewis. Crown 8vo. Pp. 123.

THE want of a handy little book on this subject was greatly felt, as the material is so scattered in the large text-books that it is difficult to properly appreciate its significance. The subject is clearly put and easily understood, and the diagrams are good. The account of the various operations is specially worthy of note, and the recommendations in favour of each put the case fairly. Faults are few—the only one of note being the sixth diagram, where a recognised and well-known exception is treated as if it were the rule—namely, that matter descending into the hiatus semilunaris is conducted backwards, and falls into the antral cavity, lodging there, and giving the signs of antral disease when the real affection is in the frontal regions. There is also a misprint in the latter part of the book, where the distance from the anterior inferior nasal spine is given as 7-8 *mm*., whereas it should be 7-8 *cm*.

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*An Introduction to Dermatology.* By NORMAN WALKER, M.D., Fellow of the Royal College of Physicians of Edinburgh; formerly Physician for Diseases of the Skin to the Royal Edinburgh Infirmary. With a Frontispiece, 29 Plates, and 34 Illustrations in the Text. Bristol: John Wright and Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1899.

IN this well-printed octavo of 247 pages will be found a fairly good account of the present state of our knowledge of symptomatology and pathology of cutaneous diseases, as well as of the results—so often disappointing—of the more usual methods of treatment. The text, as the author himself tells us, is "practically a reproduction of the lectures" which he has been in the habit of giving to his students; and we cordially endorse the hope expressed "that they may be found useful by a larger audience." The space chosen is, of course, far too limited to permit the development of a complete system. He informs us in his preface: "I have described fully all the more common diseases, and less completely those rare ones which the ordinary practitioner is likely to meet with, while I have omitted, for the sake of space, those rare conditions which are mainly of interest to the specialist."

The author is professedly, and very evidently, a devotedly admiring disciple of Dr. Unna, whose advanced views on many pathological conditions of the skin will be found well represented—notably under the headings of eczema, seborrhœa, lichen, and lupus erythematosus.

Of the illustrations it may be said that some will be considered sketchy, some diagrammatic, some caricaturish, and some perhaps fanciful. But we do not feel inclined to be too severely critical on this head. No illustrations can ever form a reliable substitute for fair clinical observation, and we know from long experience that the average student is but too apt to economise cerebral expenditure when furnished with a richly-illustrated text-book. Upon the whole, we consider the volume before us a very useful " introduction " to the wide and interesting domain of cutaneous pathology and therapeutics; and as such we recommend it to the notice of students and general practitioners.

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*The British South Africa Company (Incorporated by Royal Charter*, 1889). Reports on the Administration of Rhodesia, 1898 to 1900. Printed for the Information of Shareholders.

THIS South African Blue Book, like every other authoritative communication from that quarter of the world at the present date, contains varied information—nearly all of which is generally interesting to the British public at large, and a portion, at least, very specially so to the medical section thereof. On page 202 opens the report on " Horse-sickness in Rhodesia," the equine plague which has brought such disastrous consequences to the British Army in the present unhappy war. " This malady, which is peculiar to Southern Africa, is a specific infective disease. It is characterised by high fever and by an almost total absence of visible symptoms (except in the case of the Dikkop and blue-tongue variety of the disease) until just before the onset or death." That report has been prepared by Dr. A. Edington, F.R.S., Bacteriological Institute, Grahamstown. This brilliant observer has far outrun the investigations of Major Joshua Nunn, who had concluded that this disease could not be produced in healthy animals by inoculation with any of the products of those which had already succumbed to the malady. Dr. Edington has found that, although other materials derived from diseased bodies are "uncertain in their action," "a suitable dose of fresh blood has been invariably infective, and, as an almost unvarying result, death follows." Horses which recover from the disease are afterwards known as "salted"; they are partially but not completely protected from future attacks—a discouraging feature with regard to inoculation.

An instructive "Report on Pleuro-Pneumonia" follows, the contribution of Mr. J. M. Sinclair, Chief Government Veterinary Surgeon. This report also contains a vast amount of most interesting pathological information compressed within a small space.

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*The Johns Hopkins Hospital Reports.* Vol. X. Nos. 1 and 2. Baltimore: The Johns Hopkins Press. 1901. Pp. 132.

THIS number of these valuable Reports contains three papers. The first is by Jesse W. Lazear, M.D., on the "Structure of the Malarial Parasites." It has been known for a good while that when the malarial parasite is stained with methylene blue there is in most organisms a small round or ovoid portion which remains unstained, and which can often be distinguished in the fresh specimen as a non-pigmented vacuole-like area. The methods of staining employed by previous workers were tested by Dr. Lazear, and as a result of his work he has devised a method of staining by polychrome methylene blue and eosin, which when exactly employed gives far better results than any other process which has been employed in the study of the parasite. It is even of great diagnostic value, for the author "has seen in Cuba several obscure cases of æstivo-autumnal fevers in which the ring-shaped hyaline bodies were much more easily found in the stained specimens than in the fresh blood."

"The malarial parasite is made up of a protoplasmic portion which stains blue and a nucleus composed of a peripheral achromatic zone and a central portion made up of chromatin which takes a deep carmine violet colour." A detailed account is then given of the tertian and quartan parasites, and of the parasites of the æstivo-autumnal fevers. The descriptions are illustrated by a coloured plate, in which the appearances are admirably figured. The paper is a valuable contribution to our knowledge of the malarial organisms. Incidentally the interesting fact is noticed that where blood films are stained by the author's method the "platelets show a fine network throughout their structure which takes the chromatin stain. This strengthens the evidence in favour of the view that they are of nuclear origin."

The second paper, by Dr. Thomas R. Brown, is on "The Bacteriology of Cystitis, Pyelitis, and Pyelonephritis in Women, with a Consideration of the Accessory Etiological Factors in these Conditions, and of the Various Chemical and Microscopical Questions Involved." The author calls attention to the recent recognition—not yet universal—of the bacterial nature of cystitis and pyelitis, and to the uncertainty which still exists as to the micro-organisms commonly found in these infections. His object is to determine "the bacterial flora of the infections of the urinary tract in women, to discuss the other factors which may play a part in the etiology of such infections, to note the various modes of entrance of the bacteria into the urinary organs, to formulate, if possible, certain rules regarding the relationship between the species of bacteria and the clinical picture presented, to suggest from these findings the line of therapy to be carried out, and to note carefully any details in the cases, individually and collectively, that might tend to throw light upon the moot points of this question or open up new lines of thought." The work is done exclusively on women, under peculiarly favourable circumstances, as many of the cases were post-operative, and could be studied before, during, and after the infection; in all the cases of renal infection the urine was obtained directly from the kidney by catheterisation of the ureters, and a careful cystoscopic examination was made in most instances. Upwards of one hundred cases have been examined.

The work is of great comprehensiveness, extends to 78 pages, and is divided into ten chapters. It is a most important addition to the literature of urinary disease, and cannot fail to attract the notice of surgeons. We can only reproduce a few of the most important conclusions of the author.

The direct cause of the infection of the urinary tract in women is the invasion of some form of micro-organism. Of these the most common is *B. coli communis*, which can by itself set up a true infection. It manifests great varieties in virulence and in pyogenic properties. Other organisms frequently found are *B. tuberculosis*, various staphylococci, and *B. proteus vulgaris*. Among other organisms less commonly met with are *B. pyocyaneus*, and *B. typhosus*. Cases of infection due to *B. coli* are more common in women than in men, owing to proximity of the female urethra to the anus. Besides the invasion of the parasite, other factors are in most cases essential to the development of a cystitis. Of these the chief are anæmia, malnutrition, injury of bladder, congestion of bladder, and retention of urine. In cystitis the chief mode of infection is through the urethra, although descending infection from the kidney, pyogenic metastasis by blood or lymph, direct transmission from intestine, or some adjacent focus of infection are possible. In pyelitis and pyelonephritis the infection occurs in about equal proportion either from the bladder along the ureter, or by blood and lymph currents. In the majority of cases of cystitis and pyelitis the urine is acid. If the urine is ammoniacal this may render the bladder susceptible to infection, without further accessory ætiological factor. In cases of infection of the kidney due to urea-decomposing micro-organisms a stone is likely to be present if the case is chronic. In some cases most of the symptoms of cystitis are present, but no infection. Of these the most difficult to diagnosticate is urinary hyperacidity of neuropathic origin. Although absolute certainty in the diagnosis of renal affections can be arrived at only by catheterisation of the ureters, a probable differentiation between renal and vesical infections can generally be made by a careful study of the urine alone. Tubercular infections of the urinary tract frequently occur with no other demonstrable tuberculous lesion elsewhere. It is probable that in these cases a tuberculous gland would be found *post mortem*. For proper diagnosis, prognosis, and treatment a careful chemical and bacteriological study of the urine is always absolutely essential.

The third paper, by Dr. Richard P. Strong, describes "Cases of Infection with Strongyloides Intestinalis (first reported occurrence in North America)." A fatal case of infection with this comparatively little known parasite is recorded at length, and a short account is given of four other cases seen at Manilla, one of which terminated fatally. A very complete account of the worm is given, and the entire literature of the parasite is collected and reviewed. It is of great interest that Dr. Strong has succeeded in infecting monkeys by feeding them with the embryos of strongyloides intestinalis through an œsophageal tube. The animals had diarrhœa, and in their stools large numbers of ova were found containing unhatched embryos. This is interesting, because in men ova are rarely found in the fresh fæces. Monkeys freshly captured have sometimes been found infected with this parasite, which causes in them the same change as in man. This paper is an important contribution to helminthological literature. It is illustrated by two plates, showing the adult and free living form of the parasite, and some of the anatomical changes produced by it in the intestine.

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*The Criminal Mind.* By DR. MAURICE DE FLEURY. English Translation. London: Downey & Co. 1901. Small 8vo. Pp. 196.

THIS book, like all Dr. de Fleury's works which we have met, is characterised by much charm of style and sweet reasonableness of manner. Nor is this pleasant condition brought about either by relinquishing the logical methods so dear to Frenchmen or by the avoidance of topics of controversy, for it is easy to be persuasive if one has no opinion of one's own, or if one does not venture outside the limits of propositions which are universally accepted. Otherwise with our author, who grapples with some of the most controversial of subjects with such a charming absence of controversial heat, with such blandness and suavity, and with such a transparent desire only for the truth that we almost forget that we are discussing topics which have been in dispute from the beginning of human society, and probably will be till its end.

Our author sets out with this comforting assurance:—"I do not intend to defend all the modern theories of the criminalist doctors. I begin by saying that some among them have deceived themselves very seriously, and that not only have they fallen into the error of hasty generalisation, but they have been guilty of the more serious fault of mal-observation. Lombroso's anatomical type of the born criminal is now only a dream of that genial, but disorderly, chaotic, and sketchy brain. All the logic of a Garofalo, all the subtlety, vigour and acuteness of an Enrico Ferri can only end, starting from that basis, in insecure systematisation." Besides this rejection of the dreams of the earlier criminal anthropologists, the most remarkable feature of the book, and its most valuable practical point, is the acknowledgment of modified responsibility. "One of the few reforms which have some chance of being actually brought about is the creation—according to the desire of M. Magnan and his pupils—of 'mixed houses,' half hospital and half prison, for criminals who, without being quite insane, are nevertheless suffering from a malady sufficiently formal, sufficiently classified, to enable the jury to admit what it is agreed to call 'extenuated responsibility.'"

Our author presents the pleasant peculiarity of being sufficiently acquainted with human life and motives to be free from that odious fault which might be called scientific bigotry. He is a convinced and logical determinist, yet he speaks of the older beliefs always with respect and sympathy, and sometimes in a way that seems to indicate that he believes in their ultimate perfect reconcilement with the last results of science.

In one respect we could almost envy Dr. de Fleury his simple faith. He lays down the doctrines of cerebral localisation, of the association centres, of the neuron (with particular emphasis on the functions of the collaterals), and then he seems to think that in some way the old painful riddle is solved. "Biologists are commonly reproached with refusing to believe in the soul, because it escapes their scalpel. That old quarrel has no longer any *raison d'être.* In truth, since C. Golgi and Ramon y Cajal have promulgated their methods of microscopical preparations, the soul is there under our scalpel, and the foregoing pages are but a topography, a geography, an anatomy of the faculties of the soul." Elsewhere Dr. de Fleury mildly reprobates the crude materialism of the earlier observers, but the man who can persuade himself that the epoch-making discoveries of Golgi and Cajal have placed the soul under our scalpel need fear no claims that faith can make upon him.

The translation is generally good. The word "genial," however, does not bear in English the significance given to it in a passage quoted above, where it is used to mean pertaining to genius.

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### *The New Zealand Medical Journal.* Edited by J. MALCOLM MASON.

WE have received the first number of the second volume of this excellent monthly, which contains some twelve original articles, one of which—"A Factor in Open-air Treatment"—gives an interesting account of Taranaki, a New Zealand health resort. The sand by the sea there is of a purple colour, and there is no glare as on white sands. The colour is due to the presence of pyrites, and the heat of it sometimes reaches 140° F. All through the summer and autumn it varies from 115° F. to 140° F. Patients seem to quite enjoy the hours spent on the sand. Weight and appetite improve.

# PART III.

# SPECIAL REPORTS.

## REPORT ON PUBLIC HEALTH.[a]

By Sir Charles A. Cameron, C.B., M.D.; D.P.H., Camb.; M. and Hon. F.R.C.P.I.; F.R.C.S.I.; F.I.C.; Ex-President, Hon. Dip. Public Health, and Professor of Hygiene and Chemistry, R.C.S.I.; Vice-President and Ex-President of the Royal Institute of Public Health, and of the Society of Public Analysts; Medical Officer of Health for Dublin; Hon. Member of the Hygienic Societies of France, Belgium, Paris, and Bordeaux, the Academy of Medicine, Sweden, and of the State Medical Society of California, &c.; Examiner in Sanitary Science, Royal University of Ireland; Member of the Army Sanitary Committee, &c.

(*Continued from page 377.*)

### FORMALDEHYDE AS A DISINFECTANT.

Dr. David Brough, of Boston, has published an interesting *brochure* on the above subject. This gas is a derivative of methyl-alcohol (wood spirit), and has the formula $CH_2O$. Dissolved in water it is known in commerce as formalin. It is used in the preservation of cream and other articles. I employ it in the disinfection of rooms, sometimes alone and sometimes in conjunction with mercurial chloride spray. The odour of sulphurous acid is not easily got rid of in a disinfected room, but that of formalin is destroyed by the evaporating of a little solution of ammonia into the atmosphere.

Dr. Brough speaks highly of this disinfectant. He says that the gas acts best between the temperatures of 50° and 110° F. Below 35° its action is unsatisfactory. He believes that to be really efficacious a full amount of the gas must be employed. He considers that not less than a pound of formalin per 1,000 cubic feet should be used, and even so much as two pounds might be employed. In this respect he agrees with Dr. Wyatt Johnson, of Montreal, who has experimented also with formaldehyde.

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[a] The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of the Journal.

A great advantage attending the use of formalin is that it is without injurious action on clothing, bedding, &c.

Formalin is really only a surface disinfectant. It has not the penetrative power of superheated or ordinary steam. It is, therefore, more adapted for disinfection of rooms than for the disinfection of clothing and bedding. In Dublin it is used only for the former purpose. In disinfection of clothes and bedding a great point is the expulsion of the air from the pores. Professor Delépine found that saturated steam, free from air, killed anthrax spores in 35 seconds.

### THE PLAGUE IN SYDNEY, AUSTRALIA.

I have been favoured with a copy of a report on the outbreak of plague in Sydney by Dr. J. Ashburton Thompson, the Chief Medical Officer of the Government and the President of the Board of Health. It is of folio size, and contains an immense number of large and beautifully-executed maps and diagrams.

Sydney and its suburbs contained a population of 456,000 in December, 1899. The disease appeared in January, 1900, and lasted till August; 303 persons were affected, of whom 103 died. The incidence of the disease fell heavily on males—239 being attacked as against 66 females. The older the patient the more fatal, on the average, was the attack. Haffkine's prophylactic was used in 12,700 instances, of whom 10,700 were "contacts." In only 13 cases were "protected" persons attacked, and none of them died.

The Health Authorities adopted every measure likely to prevent the spread of the disease. Dirty places were cleansed and disinfected. Instructions what to do were issued to the public. A crusade against rats was instituted. Ships were fumigated. No fewer than 3,000 scavengers were at one time at work. A plague hospital was established. Rats were believed to have played an important part in the propagation of the poison of the plague, and it was surmised that the plague was primarily a disease of the rat. Food was not believed to be the means of conveying the infection. Dr. P. L. G. Simond, a French pathologist, has shown that fleas are an important factor in spreading the disease. He actually detected the bacilli of the disease in these insects. No doubt the fleas derived them from infected rats.

Dr. Thompson says:—

The teaching of the foregoing study of plague, as it appeared at Sydney, seems to be as follows:—

"1. The disease was not directly communicated from the sick to the well—in other words, was not 'catching.'

"2. It was not communicated in any important degree, at all events, from the sick to the well by mediate channels (clothes, household goods, merchandise, excreta).

"3. The infection attached to localities, and spread to others adjoining and continuous with that in which it was first manifested.

"4. It also spread in a fashion which betokens the possibility of its being transported mechanically from an existent focus to a considerable distance (Moore Park garbage-tip and Manly), and there initiating an independent focus.

"5. In the buildings on any infected locality cases occurred irregularly, and showed no special proneness to occur in adjoining houses.

"6. When the occurrence of one case among the inhabitants of a building showed that the infection was present in it, secondary cases rarely followed. Irregularity of incidence on houses was accompanied with irregularity of incidence on the inmates.

"7. An epizoötic disease among rats preceded the first case which occurred in man.

"8. This epizoötic disease was plague.

"9. The area over which the epizoötic extended was practically co-extensive with that on which cases of plague in man were observed.

"10. The epizoötic died out, as far as can be learned, at the same time as the epidemic ceased.

"11. The epidemic was caused by communication of the infection from rats to man."

### THE TUBERCULOSIS AND PUBLIC HEALTH CONGRESSES.

Sir Thomas Pile, Bart., and myself were delegates from the Corporation of Dublin to the above-mentioned Congresses.

The Congress on Tuberculosis was held in London from the 22nd to the 27th July, 1901. The opening meeting, held in St. James's Hall, was very largely attended. Many ambassadors, ministers plenipotentiary, foreign delegates, and colonial commissioners were present, as were also delegates from almost all parts of England, Ireland, and Scotland, and many noblemen, including the Lord Lieutenant of Ireland, and other notable persons. The Duke of Cambridge presided, as representing the King.

The work of the Congress was carried on in several sections, and dealt with tuberculosis from every standpoint—state, municipal, medical, climatological, pathological, bacteriological, sanitary, and veterinary.

*Notification of Phthisis.*—Numerous papers were read and speeches made in reference to the notification of phthisis. In a paper by Dr. Biggs, of New York, it was stated that tuberculosis was first made a notifiable disease in New York in 1897, and that the example of that State was followed by Michigan, Buffalo, and Philadelphia. It was stated that there were excellent effects produced in New York by the notification of consumption. A sum of 60,000 dollars was appropriated for the benefit of poor persons suffering from the disease. Disinfection in relation to it was carried out in an effective manner and with good results.

Alderman M'Dougall, delegate from the Manchester Corporation, read an interesting paper on voluntary notification in that city. From September, 1899, to the end of March, 1901, 2,338 cases were notified. Of these 1,701 came from public institutions, and 628 from private practitioners. In the year ended March 31, 1901, 2,300 houses, in which tuberculosis patients had resided, were disinfected.

Councillor Herbert Anderson, representing Kensington, contended that disinfection should be compulsory, as voluntary notification had in his district not been at all general. It was unfair that some practitioners should curry favour with the tubercular patients by not notifying the disease, and thus placing at a disadvantage those public-spirited men who did notify.

Dr. Cooper-Patten, of Norwich, gave a favourable account of the results of voluntary notification in that city.

Dr. Holmboe, of Norway, said that notification of tuberculosis of the lungs, skin, and urinary organs existed in that kingdom.

After considerable discussion, in which a greatly preponderating opinion in favour of notification was evident, the following resolution was unanimously adopted:—

"That the voluntary notification of phthisis, attended with tuberculous expectoration, and the increased preventive action which it has rendered practicable, have been attended by a promising measure of success; and that the extension of notification should be encouraged in all districts in which efficient sanitary administration renders it practicable to adopt the consequential measures."

*Disposal of Expectorated Matter.*—Professor Schrotter, of Vienna, advocated the destruction by fire of tuberculous expectorated matter, and the use of special spittoons, which in Vienna cost a shilling. We think spittoons ought to be supplied gratis to the consumptive poor. Dr. Wallets suggested the use of a galvanised mug, containing a piece of butter paper and a little sawdust. The contents could be easily burned. Dr. Antonio Espina y Capo, of Madrid, advocated the use of "hygienic" paper spittoons, which would cost a mere trifle, and could be readily burned. Its use would render that of the handkerchief unnecessary.

It seemed a general opinion that the dried expectorated matter from the lungs of consumptive patients was the chief means by which the disease was spread.

*Light and Pure Air Preventive Measures.*—Much discussion took place in reference to the effects of deficiency of light and of pure air in promoting various forms of tuberculosis. It was conceded that bright light has a destructive effect on the micro-organisms of tuberculosis, and that they flourished in places where the air was vitiated by over-crowding. Sir Herbert Maxwell quoted very appopriately the Italian maxim, "Where the sun does not come the doctor does." "Deficient ventilation," said Dr. Denison, of Colorado, "was the keynote of the cause of tuberculosis, as outdoor life was the keynote of its cure."

*Infection from the Ox.*—The most remarkable contribution to the Congress was an Address by Professor Robert Koch, of Berlin. This distinguished investigator has immortalised himself by the discovery of the *Bacillus tuberculosis*, the microbe which causes tuberculosis. In his Address to the Congress he related the numerous experiments which he had made to communicate tuberculosis from man to the ox, and all of which had proved failures. If, therefore, the disease cannot be conveyed from man to the ox, can bovine and human tuberculosis be the same disease exactly? Profesor Koch believes that they are distinct. This important question then arises—can the tuberculosis of the ox be transmitted to man? Of course this question cannot be solved by direct experiment, but Professor Koch seems to believe that man cannot receive the disease by eating the flesh or drinking the milk of a tuberculous cow. If such be the case, then it is wrong to destroy the flesh of a tuberculous ox, and it is needless to sterilise or Pasteurise the milk of a tuberculous cow.

It is needless to say that the statement of Koch has created a profound sensation; but, whilst his statement of the incommunibility of human tuberculosis to the ox is not doubted, the vast majority of medical men and veterinarians seem to adhere to the general opinion that man is infected by the tuberculous ox. Professors Nocard of France, Bang of Copenhagen, Macfadyen of London—all great authorities on the subject—expressed dissent from Koch's views. Lord Lister, M.D., also expressed dissent.

We believe that it would be most unwise to discontinue the precautions taken to prevent the use of the flesh and milk of animals which are decidedly affected with the bacilli of tubercle until more satisfactory proofs of their innocuousness is given than that afforded by Koch's experiments. This will, no doubt, be a general opinion. At the Congress a resolution was unanimously carried that the Board of Agriculture should act in relation to the matter, so that Koch's view should be confirmed or refuted. Sir James Blyth, Bart., Treasurer of the Congress, has offered to place at the disposal of the Board his herd of cows.

The Government have now appointed a Commission to investigate the subject. It consists of Sir Michael Foster, K.C.B.; Dr. Sims Woodhead, and Professors Sidney Martin, Macfadyen, and Boyce.

Another resolution carried unanimously was to the effect that the local authorities should have power to order the slaughter of tuberculous cows.

The following resolutions were passed at the General Meeting of the Congress on Tuberculosis, held at Queen's Hall, on Friday, 27th July, 1901:—

1. "That tuberculous sputum is the main agent for the conveyance of the virus of tuberculosis from man to man, and that indiscriminate spitting should, therefore, be suppressed."

2. "That it is the opinion of this Congress that all public hospitals and dispensaries should present every patient suffering from phthisis with a leaflet containing instructions with regard to the prevention of consumption, and should supply and insist on the proper use of a pocket spittoon."

3. "That the voluntary notification of cases of phthisis attended with tuberculous expectoration, and the increased preventive action which it has rendered practicable, has been attended by a promising measure of success, and that the extension of notification should be encouraged in all districts in which efficient sanitary administration renders it possible to adopt the consequential measures."

4. "That the provision of sanatoria is an indispensable part of the measures necessary for the diminution of tuberculosis."

5. "That in the opinion of this Congress, and in the

light of the work that has been presented at its sittings, medical officers of health should continue to use all the powers at their disposal, and relax no effort, to prevent the spread of tuberculosis by milk and meat."

6. "That, in view of the doubts thrown on the identity of human and bovine tuberculosis, it is expedient that the Government be approached and requested to institute an immediate inquiry into this question, which is of vital importance to the public health and of great consequence to the agricultural industry."

7. "That the educational work of the great national societies for the prevention of tuberculosis is deserving of every encouragement and support. It is through their agency that a rational public opinion may be formed, the duties of public health officers made easier of performance, and such local and State legislation as may be requisite called into existence."

8. "That this Congress is of opinion that a permanent International Committee should be appointed (*a*) to collect evidence and report on the measures that have been adopted for the prevention of tuberculosis in different countries; (*b*) to publish a popular statement of these measures; (*c*) to keep and publish periodically a record of scientific research in relation to tuberculosis; (*d*) to consider and recommend measures of prevention. This Congress is further of opinion that all international and great national societies, whose object is the prevention of tuberculosis, should be invited to co-operate."

9. "That, in the opinion of this Congress, over-crowding, defective ventilation, damp, and general insanitary conditions in the houses of the working classes diminish the chance of curing consumption, and aid in predisposing to and spreading the disease."

10. "That the following question be submitted for the consideration of the next Congress on Tuberculosis:—The constitutional conditions of the individual which predispose to tuberculosis, and the means by which they may be modified."

11. "That, while recognising the great importance of sanatoria in combating tuberculosis in all countries, the

attention of Government should be directed to informing charitable and philanthropic individuals and societies of the necessity for anti-tubercular dispensaries as the best means of checking tubercular disease among the industrial and indigent classes."

### THE CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH AT EASTBOURNE.

This Congress was opened on the 25th of July, 1901, by an Address from the President, the Duke of Devonshire. The attendance was large, nearly 1,000 persons being present, most of them municipal representatives.

*The Housing of the Working Classes and the Poor.*—This subject was the principal one discussed at the Congress. It was noticeable that the great majority of the speakers directed their observations to the subject of the sad conditions under which the poor are lodged.

One of the most interesting papers read at the Congress was that contributed by Baillie J. Steele, of Glasgow, on "The Housing of the Working Classes and the Working of the Municipal Family Homes." The Corporation have erected 46 blocks of buildings. They include 200 shops and 1,455 dwellinghouses. Of the latter 402 consist of one apartment, 890 of two apartments, 152 of three apartments, and 11 of more than three apartments. The rents are as follow:—Minimal rent—One room, £4 10s. a year; two rooms, £6 16s.; three rooms, £12 9s. Maximal rent—£8 15s., £14, and £21 for the above three classes of houses. In Scotland the term house is applied to any dwelling, even if consisting of one room only, occupied by a family.

These dwellings were all constructed under the provisions of an Improvement Act passed in 1866. As many unsanitary houses had to be cleared away, the scheme was not one merely to provide healthful dwellings, but also to clean an unsanitary area of 88 acres, containing a population of 51,000. The cost of the scheme was estimated at half a million sterling, and power of assessing a rate of 6d. per £ for the first five years and 3d. for the succeeding 10 years was obtained. Ultimately it was found that the scheme would cost a million.

In 1897 the Corporation obtained another Act of Parliament enabling them to acquire compulsorily 7 congested areas and ground, to the extent of 25 acres, inside or outside the city. The scheme has in part been carried out. A range of four-storied buildings has been erected, containing 69 one-room and 84 two-room dwellings. The former are let at an average annual rent of £5, and the latter at an annual average rent of £8. The ground cost 7s. per square yard, and the houses were erected at a cost of 4½d. per cubic foot. The rents charged yield 5 per cent. on the cost of the site and 3½ per cent. on the cost of the buildings, and 1⅔ per cent. for sinking fund. All this is exclusive of 25 per cent. for taxes, management, and repairs. Care is taken that the dwellings are occupied by persons earning small wages.

Glasgow Corporation have also erected seven nightly lodging-houses, accommodating 2,430 persons. The charges range from 3½d. to 6d. per night. The buildings and equipment cost £109,343. The revenue for the year ended 31st May, 1900, was £16,685 15s. 2d. This gave a return of £4 17s. 1¼d. per cent., which is very satisfactory.

A novel institution has been established by the Glasgow Corporation under the name of "The Family Home." It is intended for families consisting of one parent (father or mother) and children. It contains 160 single bedrooms, each capable of accommodating one adult and three children. There are a dining-hall, kitchen, recreation rooms, baths, and lavatories. The whole place is lighted by electricity, and warmed by hot water pipes. The rent of a room varies from 4s. to 5s. a week. Meals are supplied at the lowest possible cost. The house is not financially as successful as the nightly lodging-houses. In 1900 the loss was £168, which, however, was less by £322 than in 1899.

A very valuable paper was read by the Town Clerk of Shoreditch (Mr. Robinson), showing the increasing difficulties of providing dwellings for the working classes in

London. He pointed out that the cost of building had greatly increased, the bricklayers now only laying 500 bricks per day, whereas they formerly laid 1,000.

*Isolation Hospitals.*—A remarkable paper was read by Dr. C. K. Millard on Infectious Diseases Hospitals. He endeavoured to prove that scarlet fever had increased, or shown less decrease, in towns in which there were isolation hospitals. He moved a resolution to the effect that the subject should be inquired into. The resolution was seconded by Dr. Wheatley, but was rejected by 73 to 42 votes.

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## ROYAL COLLEGE OF SURGEONS, EDINBURGH.

At the annual meeting on Wednesday, October 16th, 1901, Dr. John Halliday Croom was elected president for the ensuing year. "The Victoria Jubilee Liston Prize" of £100, founded by His Excellency the late Dr. Robert Halliday Gunning, of Rio de Janeiro and Edinburgh, for the greatest benefit done to practical surgery by any Fellow or Licentiate of the college during the quadrennial period ending 20th June, 1901, was awarded to Francis Mitchell Caird, F.R.C.S. Edin., 13 Charlotte-square, Edinburgh. The Surgical Essay Prize of one hundred guineas, offered by the college for an original unpublished essay on surgery, in any of its branches, on anatomy, physiology, therapeutics, or pathology in their relations to surgery, was awarded to James Veitch Paterson, F.R.C.S. Edin., 5 Castle-terrace, Edinburgh, the title of whose essay was "The Lymph Flow through the Eyeball." The following gentlemen having passed the requisite examinations were admitted Fellows of the college:—Francis Cubbon Rogers, L.R.C.S.E., Stockport; James Adam Dick, M.D., New South Wales; Clement Somerton Clark, M.B., Ch.B., Edinburgh; Edwin Zerubabel Davies, M.B., L.R.C.S.E., Edinburgh; William Henry de Silva, M.B., C.M., Colombo; John Robert Foster, M.B., C.M., London, S.E.; Andrew Gibson, M.B., Ch.B., Paisley; Sampson John Rodger Greville, L.R.C.S.E., Edinburgh; David Heron, L.R.C.S.E., Edinburgh; William Llewelyn Jones, M.D., Merthyr Tydfil, S. Wales; John Stuart Shepherd Lumsden, M.B., C.M., Indian Medical Service; William John Orr, M.B., C.M., Edinburgh; Ernest John Peill, M.B., Ch.B., Peking; Bertram Crossfield Stevens, M.D., M.R.C.S. Eng., Leeds; and William Young, M.D., Wellington, New Zealand.

# PART IV.

# MEDICAL MISCELLANY.

*Reports, Transactions, and Scientific Intelligence.*

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Lombe Atthill, M.D., F.R.C.P.I.
General Secretary—John B. Story, M.B., F.R.C.S.I.

## SECTION OF PATHOLOGY.

President—Professor A. C. O'Sullivan, M.D.
Sectional Secretary—E. J. McWeeney, M.D.

*Friday, March 22, 1901.*

The President in the Chair.

*Exhibits*:—(1) *Bony Tumour of Conjunctiva.*

**Mr. J. B. Story** and **Dr. H. C. Earl** exhibited a bony tumour of conjunctiva.

**Mr. Maunsell** said there seemed to him a strong objection to Mr. Story's "reversion" theory, and that was that none of these cases were bilateral. Could it not be explained by a continuation up of the facial cleft and an inclusion therefrom?

The **President** said there was no doubt that it was bone, but the formation of bone pathologically was not so uncommon that one would feel it necessary to go back to any embryological reason for its origin. The tumour, he presumed, was congenital. (Mr. Story—"Probably.") One found true bone, not merely calcification, developed in inflammatory effusions that had organised, and bone was often pathologically developed in other conditions, so that one required some stronger reasons before concluding anything so important as a reversion to the type of a fish's eye.

**Mr. Story**, replying, said he would like a reference from Dr. Earl to bone occurring in dermoid tumours. His knowledge was not deep enough to deal with the facial cleft, but it was a curious thing that in these cases the bone had always been found in the same position in the eyeball—namely, underneath the conjunctiva, between the insertions of the superior and external recti muscles, and there had been no history in any of the cases of any inflammatory processes through which bone might often be developed inside the orbit. If it were bone formed after inflammatory changes in the connective tissue, one would expect it to be found elsewhere than in this particular locality between the muscles. Furthermore, they knew that in other animals bony plates were found, so that he thought the hypothesis he had brought forward was as good as any other.

### (2) *Dermoid Cyst of Ovary.*

Dr. H. C. Earl showed a dermoid cyst of the ovary, with almost complete calcification of its wall. The cyst was bilocular. The larger cavity, the wall of which was completely calcified, contained a thin fluid holding numerous cholesterin crystals in suspension, and a few hairs. The small cavity contained a mass of sebaceous material and numerous hairs. The calcification of its wall was less complete than was that of the larger cavity.

### (3) *Pseudo-mamma.*

Dr. H. C. Earl also showed a dermoid cyst of the ovary, which contained a well-formed pseudo-mamma. Its nipple contained numerous hairs and sebaceous glands, as well as some very large sweat glands. There was no mammary gland tissue present.

### (4) *Epidermoid Cyst.*

Dr. H. C. Earl exhibited an epidermoid cyst from the sole of the foot of a man aged about forty years. It lay over the head of the first metatarsal bone, and was removed on account of the great inconvenience the patient suffered. The cyst was almost spherical in shape, and one-fourth of an inch in diameter. The epidermis lining it was thick, and all its layers distinct and well marked. There were no papillæ. The contents of the cyst were desquamated, horny, epidermic scales.

Professor McWeeney said about three years ago he gave to the Mater Hospital Museum a specimen resembling the third, but it was much larger, and contained a number of these pseudo-mammæ, and none of them had a nipple, whereas Dr. Earl's specimen had a distinct nipple. He made sections in the hope of finding gland tissue, but was unable to find any. It seemed to him then that the sebaceous glands, which opened into the hair sacs, with which the epidermis covering these pseudo-mammæ was thickly covered, were very much hypertrophied and larger than usual. They knew the current idea that mammary glands were modified sebaceous structures, so that this hypertrophy might have been an attempt at the formation of typical milk-glands. He did not quite gather why Dr. Earl regarded his second specimen to be so remarkable as to have very few parallels. He thought that calcification of the walls of a dermoid cyst was not very unusual, and a dermoid divided into two loculi by a septum was an occurrence which most pathologists were more or less familiar with. He had seen dermoids with considerable calcification of the walls, but the formation of bone in ovarian dermoids was an extraordinary occurrence, as well as the peculiar similarity it presented to adult bones, especially the inferior (?) maxilla. The specimen he had previously mentioned contained, under a pseudo-mamma, a piece of bone with teeth, like one of the rami of the lower jaw. He partly dissected out that bone, and he was convinced that it could not have been a coincidence—the resemblance to the lower jaw was too striking. That opened up the question whether these tumours were twin formations or a result of parthenogenesis.

Dr. Earl, replying, said he was misunderstood as to the two cavities. As a matter of fact, each dermoid had only one cavity, but dermoids often develop in combination with multilocular ovarian cysts, and one breaks into the other. The complete calcification of the wall was, he thought, a very uncommon thing. He had seen, especially in connection with the Rotunda Hospital, a number of dermoids, and had never before met the condition, nor does Gerhardt mention the occurrence in his book.

### (5) *Calcification of Myocardium.*

Dr. Travers Smith exhibited the heart of an elderly man, which showed extensive calcification of the myocardium. The calcareous deposit, which was embedded in the wall of the left ventricle, appeared as large, very irregular masses, four or five in number, each about the size of a filbert. At several places these masses projected into the lumen of the ventricle. The aortic and mitral cusps showed little signs of endocarditis. There was extensive atheroma of the coronary arteries. The clinical history of the case was unknown.

### (6) *Calcified Cyst of Spleen.*

Travers Smith also showed a cyst about the size of a hen's egg, the wall of which was formed of laminated fibrous tissue with an outer calcareous shell. It contained soft cheesy material, which showed microscopically fatty *débris* and large numbers of cholesterin crystals. This cyst had been found in the spleen of an aged man, one half embedded, the other projecting from the surface. The clinical history was unobtainable. Dr. Travers Smith thought it was possibly a calcified hydatid cyst, though no "hooklets" could be demonstrated microscopically.

Professor McWeeney, *re* the first specimen, said it seemed to him there were two conditions which might explain this remarkable phenomenon. One would be some sort of endocardial or subendocardial process resembling atheroma with calcification, only the amount of calcification in this case greatly exceeded what normally resulted from atheroma. The second would be a focal myocarditis depending upon obstruction through atheroma of the coronary arteries, as they knew that diseases of these arteries, including arteritis deformans, produced necrosis, and often tough fibrous cicatrices. Then all connective tissue of a low order was liable to a deposit of lime salts, especially during senile involution. He, therefore, inquired if the coronary arteries were diseased in any way, as that would lend strength to his second hypothesis.

The President remarked that it was quite evident here that the coronary arteries were affected, so that Professor McWeeney's conjectures were confirmed.

Dr. R. Travers Smith, in reply, said it was not likely that these large calcareous masses resulted from any ordinary endocarditis of an atheromatous nature. It might be supposed that it was an atheromatous endocarditis of the mitral cusps extending into the fibrous ring surrounding the mitral orifice, but the calcareous masses had spread so far beyond the region of the fibrous ring that this idea was not tenable, and there was one mass near the apex of the ventricle, and separate from those near the mitral orifice. He was inclined to think it was calcification following secondary degeneration of the myocardium, probably following diseased conditions of the coronary vessels. One would expect the calcareous matter to be limited to the fibrous deposit, but here they had it projecting into the lumen of the ventricle in a remarkable manner.

### (7) *Cancer of Gall-bladder.*

The President and Dr. Walter Smith showed a specimen of this condition.

### (8) *Cancer of Gall-bladder and Hepatic Cirrhosis.*

The **Secretary** (Professor McWeeney) showed a specimen of liver with primary cancer of the neck of the gall-bladder, and secondary diffusion over the whole of the organ, complicated with extreme cirrhosis. The cancer cells closely resembled those of squamous epithelioma.

**Dr. Dawson** asked whether they associated the extremely acute cirrhosis with the cancer, or whether it was purely due to the alcohol.

**Professor McWeeney**, in reply, said the question was very difficult to answer, because, in his experience, a great many persons could drink prodigious quantities of alcohol without getting cirrhosis. One very rarely sees a case of typical hob-nailed liver in Ireland, where intemperance was common. If the cirrhosis were due to alcohol, however, he thought it would be more chronic—that is, the small-celled infiltration would not be so prominent, and they knew from experience that nodules of cancer everywhere exerted a sort of irritating effect upon the tissues in which they were lodged. Anybody who had studied cancer of the breast spreading inward would remember how the minute inter-fibrous septa between the bundles of muscular fibres became infiltrated with small cells, a result of the irritation of the cancer. He would parallelize that with the condition in the liver.

The Section then adjourned.

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## SECTION OF SURGERY.

President—**Thomas Myles**, President of the Royal College of Surgeons in Ireland.

Sectional Secretary—**John Lentaigne**, F.R.C.S.I.

*Friday, May 10, 1901.*

The **President** in the Chair.

### *Splint for Club-foot.*

**Mr. A. B. Mitchell** showed a "Splint for Treatment of Club-foot," as well as some radiographs.

**Mr. Lane Joynt**, referring to the radiograph of a "Fracture of the Os Calcis," inquired how the singularly large size of the piece of bone which appeared to have been torn off the os calcis was to be accounted for. He had seen a great number of radiographs of the heel, but he had never seen anything at all like that. He was trying to get an idea of how this piece of bone could possibly be fitted into place again.

In reply, **Mr. Mitchell** said it was a triangular piece of bone, which, he confessed, he mistook at first for a backward dislocation of the astragalus, but he found that the joint was freely movable. He thought the apparent size of it was a photographic effect. Radiographs could not always be interpreted as they stood. A radiograph from the other side of the foot showed the same condition, and, in his opinion, two radiographs ought always to be taken.

**Mr. E. H. Taylor** observed that the splint exhibited was not new, as it was to be found in Watson Cheyne's work on "Deformities," and he (Mr. Taylor) had used it for a considerable time. It differed in one respect from Cheyne's splint, and that was in the piece turned up on the inner side.

### *On the Surgery of Chronic Ailments of the Stomach.*

**Mr. A. B. Mitchell**, Belfast, read a paper which was illustrated by a series of lantern slides indicating the condition actually met with. He referred to the experience gained from 9 operations for perforation, with 5 recoveries, and 8 operations for chronic ailments, 2 of which were carcinomatous. One case of hour-glass stomach was completely relieved by gastro-gastrostomy. Another case of pyloric obstruction by posterior gastro-jejunostomy. An interesting case was recorded in which symptoms persistently referred to the stomach were found to depend on tubercular ulceration around the ileo-cæcal valve. The cæcum was excised, and the ileum united to the ascending colon by end to side anastomosis. Recovery was uneventful. His conclusions were as follows:—(1) Exploratory operations ought to be more frequently undertaken in chronic ailments of the stomach. (2) Extensive adhesions constitute the most serious surgical complications. (3) Posterior gastro-enterostomy is to be preferred to the anterior operation. (4) For this and similar operations he preferred simple continuous suture without artificial support.

The **President** said that at present there seemed to be a conflict between the drug treatment of gastric ulcer and the surgical treatment. A great many physicians seemed to be content if the symptoms associated with gastric ulcer were relieved. He remembered a young physician saying lately that he did not believe that the condition was in any way improved, except temporarily, by palliative treatment. Referring to the first case, in a girl aged eighteen, they were told that this condition was merely hysterical;

but to say a patient was suffering from a hysterical affection of the stomach was, in his opinion, to say she was suffering from something of which the surgeon was ignorant. When a patient complaining of gastric symptoms was found to have a healthy stomach, the first idea that would suggest itself to him would be floating kidney. It was not always easy to detect a mobile kidney, and they all occasionally ignored this possible explanation of those symptoms. He had not much confidence in percussion and auscultation as methods of diagnosis in such cases. It seemed, not that percussion was a defective test, but that they were not able to apply the test reliably. With regard to the death from ether pneumonia, he thought many such deaths were really due to rapid septic poisoning, though he acknowledged that ether pneumonia might occur. Such deaths would, long ago, have been ascribed to secondary shock, but he ascribed them to fulminating sepsis, the source of the sepsis being the surface of the unhealthy stomach itself.

Mr. Lentaigne said he took it that in one of the cases Mr. Mitchell had opened the abdomen under cocaïn, and he would like to know if he had frequently done so, also some particulars as to the quantity of cocaîn used, &c. One of the most important questions in these operations was that of time. They would hear a good deal later about the different forms of suture and buttons, more especially Murphy's. He had been for a long time an ardent believer in the suture alone. He disliked leaving a foreign body, like Murphy's button, behind, and he therefore believed in suture, if suture could only be got to accomplish the work quick enough. It would be highly advantageous if they all timed their operations.

Mr. Jameson Johnson said he agreed with Mr. Mitchell's preference for the posterior operation, and also in the importance of the sutures through the meso-colon. Sutures at the end of the incision and additional sutures further out were important in preventing kinking of the bowel and consequent regurgitation of bile. He inquired if in Mr. Mitchell's operations there was regurgitation of bile, because he was trying to make up his mind as to whether cutting across the jejunum, &c., was not the better procedure. At present he believed that posterior gastro-enterostomy was quite sufficient, and that the second operation was unnecessary. His experience was limited to the absorbable bobbins, as he did not employ simple suture or Murphy's button, for the simple reasons that bobbins did not take as long as suture, and furthermore, the patient having been suffering from gastric disturbance for some time, it was important that rigid support should be given for the first few days after operation. They had all heard the objections to Murphy's button, and though the introduction of an absorbable bobbin took a few seconds longer than Murphy's button, he considered that the extra time was not badly wasted. The first case resembled one he had of a man suffering from gastric pain, vomiting, and obscure symptoms indicating either ulcer or obstruction in the stomach. Dr. Parsons saw him, and they both believed him to be a hypochondriac. As the man begged for operation he operated, but could find nothing the matter, the intestines, both kidneys, and all other organs being healthy. He sutured him up, and he left the hospital greatly improved.

**Mr. Taylor** said that the method of suturing which Mr. Mitchell had adopted was, in his opinion, the best, because in this method they could make a large opening, and one that would not contract afterwards. He did not approve absorbable bobbins, as the opening was small and often shrank to a great extent.

**Dr. Travers Smith** said that, as a physician, he would like to ask what they proposed to do in such a case as this. The patient, a girl, has complained of gastric symptoms for three or four months only, but they are definite enough to lead to the diagnosis of gastric ulcer of recent formation. Would it then be advisable to recommend an exploratory operation, and what would the surgeon, on opening the abdomen, be likely to find? What would guide him to the position of the ulcer, and what would he do with the ulcer when found? The course was quite obvious when there was severe obstruction, dilatation of the stomach, and a distinct tumour due to inflammatory exudation; but, short of these indications, he would like to hear something more definite as to when laparatomy should be recommended. Apart from cases obviously suited for surgical interference, medical treatment gave fair hope of cure. He had seen a number of cases where cure, to all intents and purposes, was complete, and he had observed these cases as long as most surgical cases were observed; so that he asserted that, in recent cases, medical treatment was not to be scorned.

**Dr. Greer** (Newport) said he wanted to raise the question of the treatment of hæmatemesis. He had recently three cases of gastro-jejunostomy for hæmatemesis, as, owing to the extreme condition of exhaustion and profound prostration, he was unable to do anything else. He used a Murphy's button in each case, and the results were as good as possible. The first was ten months ago, and there had never been an attack of hæmatemesis since. The button was passed about the 16th to the 18th day after. The question of excision of the ulcer had been raised, and he would like the opinion of the Academy on that point. He thought that a gastro-jejunostomy would probably obviate this excision, and that the former, with a button or otherwise, would be associated with less risk. Adhesions, however, would have to be considered also. Recently he had the misfortune to have to perform an autopsy on a case of gastro-jejunostomy with a two-inch Murphy's button. The button did not pass, and a radiograph showed it in the cæcum. An operation was performed by an eminent London surgeon, the button removed, but the wound did not heal. At the autopsy he found the whole abdominal cavity converted into fibrous tissue, and the intestines and all organs simply as if in plaster. This he did not quote as a result of Murphy's button, but rather the primary cause of its failure.

**Mr. Lane Joynt** said that Dr. Travers Smith had raised the question as to the treatment by operation of the ordinary cases that every physician or surgeon saw dozens of in the hospital dispensaries. His experience was that they were not suitable cases for operation. Nearly all of them were anæmic, hard-worked, and under-fed. No man, however, would hesitate in a case of violent hæmatemesis, for there it was a case of urgency.

**Dr. Parsons**, referring to Mr. Taylor's observation as to the liability of contraction after the use of a bobbin, said that in three of the cases he had seen the bobbin had been used. Two of them were cases of malignant disease, and in one life was prolonged for three months, and in the other for eighteen months. They found that in the latter a sufficiently large opening had remained. When that was so, notwithstanding the lapse of eighteen months, it seemed that Mr. Taylor's objection could be got over by using a sufficiently large bobbin. Even if the diagnosis were correct, as Mr. Mitchell had confessed, an internal examination was conducted with great difficulty. What were they to do in very early cases? Were they to open the stomach from end to end, and search for the ulcer? Even *post-mortem* there were cases where they were absolutely unable to find where hæmatemesis, occurring before death, had come from. To recommend an operation merely because a patient had got pain was, speaking generally, not justifiable. He felt that the surgical treatment was extremely brilliant, yet he also felt that Dr. Calwell deserved at least equal, if not greater, praise for realising cases past medicinal treatment.

**Mr. Lentaigne** inquired of Mr. Mitchell if he had met with cases of hyperchloridia, and if the question of operation would then arise. With reference to the time for surgical interference, there was a great difficulty even to the surgeon in that matter. He was called to see a gentleman two years ago who was suffering from ulcer which had gone so far that he had tremendous hæmorrhage, covering the floor with thick clotted blood. Here was a man suffering for five years from symptoms of gastric ulcer. Operation was absolutely refused. He was treated medicinally, and it was only fair to say that that man got well, and was perfectly well now, and has had no recurrence whatsoever. He was treated with grain doses of carbolic acid every fourth hour, and no other treatment except dietetic. That was an interesting case, in view of Dr. Greer's references to the question of hæmatemesis. Dr. Greer had treated his cases by gastro-enterostomy, which he knew had been recommended abroad for hæmatemesis, but he was not aware previously of its being practised in this country. He had read of Mickulicz's operation for that condition, where he opened the stomach, scraped an ulcer, and got a patient to recover without recurrence of the hæmatemesis.

Mr. M'Ardle said that they, as surgeons, did not advocate interference with stomachs indiscriminately, but when there was evidence of symptoms not influenced permanently by medication, it was only just that such cases should have the benefit of surgical interference. With regard to opening the abdomen during life and examining it after death, the difference was exactly the same as the difference between day and night. In the day they saw everything, in the night—well, they knew. In the day of life, on examining the stomach, they did not see empty vessels, but they saw, leading to the place of disease, that there was an infallible guide, and that was the condition of the veins of the stomach. Because of this indication he could not understand why there should be any removable disease that could not be found out. On the posterior wall there might be some difficulty, but with the modern gastroscope where was the impossibility? They opened the stomach, not from end to end, but for two inches, looked in, and with the gastroscope they saw (in life they could see what was impossible after death) the vascular fringe surrounding these ulcers, and this was never absent. Fully ten years ago, after he (Mr. M'Ardle) had read some papers on pyloric resection, Spanton, of Newcastle, sent him a case in which there had been persistent stomach trouble for five or six years. The simplicity of the case when a laparotomy was performed made them wonder how they were so ignorant. He found, what he had often discovered since, that all the gastric symptoms were the result, not of gastric trouble itself, but of a tag or band crossing the pylorus from the transverse colon, and fixed to the border of the gall-bladder. In contrasting Murphy's button with sutures and bobbins there was some confusion, as they contrasted cases of operation when the patient was half moribund with cases in which the abdomen was perfectly healthy. Moreover, a man who has had no experience of Murphy's button should not condemn it. There were also many things to be looked to in the application of the button which, if neglected, would lead to deceptive results. He begged to take exception to the statement as to the hesitancy of the physicians of the metropolis in the matter of surgical aid as compared with their brethren of the northern capital. The physicians with whom he had come in contact had given him ample opportunities, and their diagnosis was always reliable. With reference to adhesions of the stomach, particularly near the pyloric end, they were always attended with intermittent pain—pain which, in his experience, only came on, not after food, but after exercise.

Mr. Mitchell, replying, said that Dr. Smith had put a case before him, and asked him what he would do under those circumstances. In that case he would let the patient alone. He would leave her to Dr. Smith. They came in when the physician said he could do no more. It was unquestionable that a large percentage got better medicinally, but, on the other hand, a larger percentage than was generally recognised died from inefficient treatment. With regard to ether pneumonia, he did not think his case was one of septic poisoning, because of the enormous quantity of mucus poured out after the ether. It was, strictly speaking, a broncho-pneumonia. In reply to Mr. Lentaigne, he had used cocaïn five times. First in a case of acute intestinal obstruction, in which general anæsthesia was out of the question. He used a 4 per cent. solution, with two of resorcin, and a half or one of morphin. He had twice performed inguinal colotomy under cocaïn without the least pain. With regard to the question of bobbins, they could not use a large one when working at the jejunum or stomach, but had to limit themselves to one likely to pass through the ileo-cæcal valve. He wished it to be understood that he did not condemn Murphy's button. In operating, so much time was not occupied in the actual operation as in consultation and deciding what course to follow.

The Section then adjourned.

# SANITARY AND METEOROLOGICAL NOTES.

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## Vital Statistics

*For four weeks ending Saturday, November* 2, 1901.

## IRELAND.

### Twenty-two Town Districts.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending November 2, 1901, in the Dublin registration area and the twenty-one principal provincial urban districts of Ireland was 21·1 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,079,708. The deaths registered in each of the four weeks ended Saturday, November 2, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

| Towns, &c. | Week ending | | | | Average Rate for 4 weeks | Towns, &c. | Week ending | | | | Average Rate for 4 weeks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Oct. 12 | Oct. 19 | Oct. 26 | Nov. 2 | | | Oct 12 | Oct. 19 | Oct. 26 | Nov. 2 | |
| 22 Town Districts | 19·4 | 17·2 | 16·8 | 21·1 | 18·6 | Lisburn - | 36·4 | 4·6 | 22·8 | 18·2 | 20·5 |
| Armagh - | 48·2 | 27·6 | 6·9 | 27·6 | 27·6 | Londonderry | 19·6 | 14·4 | 15·7 | 18·3 | 17·0 |
| Ballymena | 9·6 | 9·6 | 9·6 | 4·8 | 8·4 | Lurgan - | 17·7 | 13·3 | 8·9 | 0·0 | 10·0 |
| Belfast - | 19·6 | 18·0 | 15·3 | 22·7 | 18·9 | Newry - | 20·7 | 16·6 | 8·3 | 29·0 | 18·6 |
| Clonmel - | 46·0 | 15·3 | 15·3 | 15·3 | 23·0 | Newtownards | 17·2 | 11·4 | 28·6 | 5·7 | 15·7 |
| Cork - | 13·7 | 15·8 | 19·2 | 19·9 | 17·2 | Portadown - | 0·0 | 20·8 | 15·6 | 15·6 | 13·0 |
| Drogheda - | 16·3 | 8·2 | 20·4 | 32·7 | 19·4 | Queenstown | 59·5 | 39·7 | 19·8 | 0·0 | 29·7 |
| Dublin (Reg. Area) - | 19·7 | 19·9 | 19·3 | 22·7 | 20·4 | Sligo - | 43·2 | 4·8 | 9·6 | 19·2 | 19·2 |
| Dundalk - | 16·0 | 8·0 | 8·0 | 8·0 | 10·0 | Tralee - | 15·9 | 0·0 | 15·9 | 21·3 | 13·3 |
| Galway - | 3·9 | 27·2 | 3·9 | 11·7 | 11·7 | Waterford - | 17·5 | 3·9 | 19·5 | 15·6 | 14·1 |
| Kilkenny - | 0·0 | 19·9 | 44·7 | 39·8 | 26·1 | Wexford - | 18·7 | 32·7 | 9·3 | 28·0 | 22·2 |
| Limerick - | 16·4 | 5·5 | 6·8 | 15·1 | 11·0 | | | | | | |

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases registered in the 22 districts during the week ended Saturday, November 2, were equal to an annual rate of 2·5 per 1,000—the rates varying from 0·0 in fifteen of the districts to 4·1 in Newry. Among the 153 deaths from all causes registered in Belfast are 2 from scarlet fever, 3 from whooping-cough, 3 from diphtheria, 6 from enteric fever, and 10 from diarrhœa. The 29 deaths in Cork include one from whooping-cough and 2 from diarrhœa.

## DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of the Area, estimated to the middle of 1901, is 375,076, being made up of the following:—City, 290,837; Rathmines, 32,589; Pembroke, 25,563; Blackrock, 8,727; and Kingstown, 17,360.

In the Dublin Registration Area the births registered during the week ended Saturday, November 2, amounted to 141—71 boys and 70 girls; and the deaths to 168—93 males and 75 females.

### DEATHS.

The registered deaths represent an annual rate of mortality of 23·4 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the area, the rate was 22·7 per 1,000. During the forty-four weeks ending with Saturday, November 2, the death-rate averaged 26·0, and was 0·3 under the mean rate for the corresponding portions of the ten years, 1891–1900, based on the estimated mean population of the Dublin Registration Area as then constituted.

Twenty-one deaths from zymotic diseases were registered during the week named. This number is 8 in excess of the number registered in the preceding week, and equal to an annual death-rate of 2·9 per 1,000 of the estimated population, the average rate for the 44th week of the last ten years being 3·5 per 1,000. These 21 deaths include 9 from diarrhœa, 5 from enteric fever, 4 from whooping-cough, one from scarlatina, and one from diphtheria.

Tuberculosis caused 19 deaths, 11 from pulmonary tuberculosis, 5 from tabes mesenterica, one from tubercular meningitis, and 2 from scrofula (tuberculosis).

Diseases of the respiratory system caused 29 deaths, a number which is 2 above that recorded in the preceding week, and equal to an annual rate of 4·0 per 1,000 of the estimated population, the average rate for the corresponding period of the past ten years being 5·3 per 1,000. Bronchitis caused 18 deaths, 8 deaths were caused by pneumonia, 2 by pleurisy, and one death was due to laryngitis.

Twelve deaths were registered as being due to "convulsions." Four of these were of children under one month old, 7 were of children over one month but under one year old, and one child who died was between the ages of one and 5 years.

Two deaths were due to apoplexy and 10 to other diseases of the brain and spinal cord (exclusive of convulsions).

Diseases of the circulatory system caused 17 deaths, and 7 deaths were caused by cancer.

Eight deaths from violence were registered—this number includes 6 cases of accidental death and 2 of suicide.

In 8 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the deaths of 5 children under one year of age (including 4 infants under one month old) and the deaths of 2 persons aged 60 years and upwards.

Fifty-four of the persons whose deaths were registered during the week were under 5 years of age (43 being infants under one year, of whom 15 were under one month old), and 43 were aged 60 years and upwards, including 18 persons aged 70 and upwards, of whom 6 were octogenarians, and one (a man) was stated to have been aged 94 years.

## STATE OF INFECTIOUS DISEASE IN DUBLIN.

### (1.) Cases of Infectious Diseases Notified to the Public Health Committee of the Corporation.

Sir Charles Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of Infectious Diseases in the City of Dublin, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | | |
|---|---|---|---|
| Week ending | October 12, 1901... | ... | 52 cases. |
| ,, | October 19, ,, ... | ... | 41 cases. |
| ,, | October 26, ,, ... | ... | 81 cases. |
| ,, | November 2, ,, ... | ... | 78 cases. |

Of the 78 cases notified in the week ended November 2, 12 were erysipelas, 33 enteric fever, 19 scarlatina, 9 continued fever, one diphtheria, one measles, 2 rubella.

### (2.) Cases of Infectious Diseases in Rathmines Urban District.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | | |
|---|---|---|---|
| Week ending | October 12, 1901... | ... | 6 cases. |
| ,, | October 19, ,, ... | ... | 1 case. |
| ,, | October 26, ,, ... | ... | 11 cases. |
| ,, | November 2, ,, ... | ... | 7 cases. |

Of the 7 cases notified in the last week, 4 were scarlet fever, one diphtheria, and 2 enteric fever.

### (3.) Cases of Infectious Diseases in Pembroke Urban District.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Pembroke, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | | |
|---|---|---|---|
| Week ending | October 12, 1901... | ... | 7 cases. |
| ,, | October 19, ,, ... | ... | 28 cases. |
| ,, | October 26, ,, ... | ... | 13 cases. |
| ,, | November 2, ,, ... | ... | 15 cases. |

Of the 15 cases notified in the last week, 3 were scarlet fever, 2 diphtheria, 5 measles, and 5 whooping-cough.

### (4.) Cases of Infectious Diseases under Treatment in Dublin Hospitals.

Twenty-one cases of enteric fever were admitted to hospital during the week ended Saturday, November 2; 16 patients were discharged, and 67 remained under treatment at the close of the week.

Seventeen cases of scarlatina were admitted to hospital, 10 patients were discharged, and 87 remained under treatment at the close of the week. This number is exclusive of 10 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Twelve diphtheria patients were admitted, 3 were discharged, and 31 remained under treatment at the close of the week.

One case of measles was admitted to hospital, 6 cases were discharged, and 4 cases remained under treatment at the close of the week.

Two cases of typhus fever were discharged from hospital, leaving one case still under treatment.

In addition to the above-mentioned zymotic diseases recognised as such, 11 cases of pneumonia were admitted to hospital, 11 cases were discharged, and 28 cases remained under treatment at the close of the week.

## STATE OF INFECTIOUS DISEASE IN BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

| | | | | |
|---|---|---|---|---|
| Week ending | October | 12, 1901 ... | ... | 104 cases. |
| „ | October | 19, „ ... | ... | 82 cases. |
| „ | October | 26, „ ... | ... | 102 cases. |
| „ | November | 2, „ ... | ... | 126 cases. |

Of the 126 cases notified in the week ended November 2, 55 were enteric fever, 9 erysipelas, 11 diphtheria, 27 continued fever, 19 scarlet fever, 4 membranous croup.

## ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, November 2, in thirty-three large English towns, including London (in which the rate was 17·4), was equal to an average annual death-rate of 17·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·9 per 1,000, the rate for Glasgow being 21·5, and for Edinburgh 16·7.

## METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat.* 53° 20′ *N., Long.* 6° 15′ *W., for the Month of October*, 1901.

| | |
|---|---|
| Mean Height of Barometer, - - - | 29·880 inches. |
| Maximal Height of Barometer (31st, at 9 a.m.), | 30·394 ,, |
| Minimal Height of Barometer (18th, at 7 30 a.m.), | 29·090 ,, |
| Mean Dry-bulb Temperature, - - | 48·7°. |
| Mean Wet-bulb Temperature, - - | 46·7°. |
| Mean Dew-point Temperature, - - | 44·7°. |
| Mean Elastic Force (Tension) of Aqueous Vapour, | ·298 inch. |
| Mean Humidity, - - - - | 86·8 per cent. |
| Highest Temperature in Shade (10th and 28th), | 61·9°. |
| Lowest Temperature in Shade (22nd), - | 35·7°. |
| Lowest Temperature on Grass (Radiation) (22nd), | 27·8°. |
| Mean Amount of Cloud, - - - | 53·7 per cent. |
| Rainfall (on 21 days), - - - | 2·396 inches. |
| Greatest Daily Rainfall (29th), - - | ·572 inch. |
| General Directions of Wind, - - - | S.W., W., N.W. |

*Remarks.*

Like October, 1900, this was a changeable, rainy, damp month. Atmospheric pressure was in very unstable equilibrium over North-Western Europe, deep depressions existing over the Norwegian sea and Scandinavia from the 5th to the 9th, and again from the 27th to the 29th. On the last-named day a sudden change in atmospheric conditions occurred, the barometer rising in the N.W. and N. with great speed, so that strong easterly winds and fine dry weather set in suddenly throughout the British Isles. The weather was cold until the 27th, when it became remarkably warm for the time of year. A good deal of thunder and lightning occurred on the 21st and 22nd.

In Dublin the arithmetical mean temperature (49·8°) was very slightly above the average (49·7°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 48·7°. In the thirty-six years ending with 1900, October was coldest in 1892 (M. T.=44·8°) and in 1896 (M. T.=45·0°). It was warmest in 1876 (M. T.=53·1°). The M. T. in 1898 was 52·8°. In 1900 it was 50·4°.

The mean height of the barometer was 29·880 inches, or 0·040 inch above the corrected average value for October—namely, 29·840 inches. The mercury rose to 30·394 inches at 9 a.m. of the 31st, having fallen to 29·090 inches at 7 30 a.m. of the 18th. The observed range of atmospheric pressure was, therefore, 1·304 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 48·7°, or 7·9° below the value for September, 1901. The arithmetical mean of the maximal and minimal readings was 49·8°, compared with a twenty-five years' average of 49·7°. Using the formula, *Mean Temp.*$=$*Min.* $+$ (*Max.* $-$ *Min.* $\times$ ·485), the mean temperature was 49·6°, or 0·1° above the average mean temperature for October, calculated in the same way, in the twenty-five years, 1865–89, inclusive (49·5°). On the 10th the thermometer in the screen rose to 61·9°—wind, W.; the same reading was recorded on the 28th—wind, S.W.; on the 22nd the temperature fell to 35·7°—wind, W. The minimum on the grass was 27·8° on the 22nd. The thermometer did not sink to 32° in the screen, but frost occurred on the grass on 3 nights.

The rainfall was 2·396 inches, distributed over 21 days—the rainfall was below, while the rainy days was decidedly above, the average. The average rainfall for October in the twenty-five years, 1865–89, inclusive, was 3·106 inches, and the average number of rainy days was 17·6. In 1880 the rainfall in October was very large—7·358 inches on 15 days. In 1875, also, 7·049 inches fell on 26 days. On the other hand, in 1890, only ·639 inch fell on but 11 days; in 1884, only ·834 inch on but 14 days; and 1868 only ·856 inch on 15 days. In 1900 the October rainfall was 3·469 inches on 21 days.

Lightning was seen on the night of the 21st–22nd. High winds were noted on 11 days, and attained the force of a gale on two occasions—the 6th and 8th. The atmosphere was more or less foggy in Dublin on the 1st, 11th, 13th, 14th, 16th, 21st, 22nd, and 29th. Lunar halos were seen on the 1st and 24th; solar halos on the 13th and 26th. The duration of bright sunshine was estimated at 115·25 hours, compared with 127·25 hours in October, 1900.

The rainfall in Dublin during the ten months ending October 31st amounted to 20·466 inches on 145 days, compared with 12·366 inches on 123 days during the same period in 1887 (the dry year), 27·863 inches on 177 days in 1900, and a twenty-five years' average of 22·840 inches on 160·4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in October amounted to 2·925 inches on 16 days. Of this quantity ·850 inch fell on the 17th, and ·655 inch on the 29th. From January 1st, 1901, up to October 31st, rain fell at Knockdolian on 135 days to the total amount of 28·030 inches. In 1893 the rainfall in the corresponding ten months was 17·801 inches on 133 days; in 1894, 32·221 inches on 154 days; in 1897, 32·730 inches on 171 days; in 1898, 24·177 inches on 140 days; in 1899, 30·000 inches on 150 days; and in 1900, 33·311 inches on 155 days.

At Cloneevin, Killiney, Co. Dublin, the rainfall in October was 2·520 inches on 21 days, compared with ·710 inch on 14 days in 1893, 6·460 inches on 17 days in 1894, 2·830 inches on 17 days in 1900, and a sixteen years' average (1885–1900) of 3·158 inches on 15·8 days. On the 17th, ·57 inch fell. Since January 1, 1901, 23·000 inches of rain have fallen at this station on 151 days.

Dr. B. H. Steede reports: At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall in October was 3·200 inches on 21 days, compared with 3·175 inches on 13 days in 1897, 4·385 inches on 17 days in 1898, 1·484 inches on 11 days in 1899, and 3·551 inches on 14 days in 1900. The heaviest falls in 24 hours were ·922 inch on the 17th, and ·724 inch on the 29th. The highest temperature in the screen was 61·1° on the 2nd and 10th, the lowest was 36·0° on the 13th. At this Second Order Station the rainfall from January 1 to October 31, inclusive, amounted to 24·953 inches on 142 days, compared with 26·479 inches on 139 days in the corresponding ten months of 1898, 27·643 inches on 140 days in 1899, and 28·599 inches on 150 days in 1900.

At the Railway Hotel, Recess, Co. Galway, the rainfall was 7·222 inches on 27 days, 1·310 inches being measured on the 7th and ·920 inch on the 17th. On the 6th, 7th, and 8th there were severe S.W. gales. The rainfall for the month was 8·307 inches on 24 days in 1900, and 3·261 inches on 17 days in 1899.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 21 days to the amount of 2·40 inches, the greatest measurement in 24 hours being ·66 inch on the 29th. The mean temperature in the shade was 50·0°, the range being from 65° on the 1st to 36° on the 22nd.

In the City of Cork, rain fell in October on 22 days to the amount of 2·82 inches, or 0·40 inch less than the average. The greatest day's rainfall was 0·44 inch on the 3rd.

At the Ordnance Survey Office, Phœnix Park, the rainfall was 2·790 inches on 20 days, ·825 inch being registered on the 29th.

Dr. J. Byrne Power, D.P.H., Medical Superintendent Officer of Health for Kingstown, Co. Dublin, reports that the rainfall in October at that health resort was 2·64 inches on 21 days. The mean temperature was 50·9°, the extremes being—highest, 63·0°; lowest, 34·5°; and the mean daily range, 11·6°. The mean sea temperature at Sandycove Bathing Place was 55·0°. The duration of bright sunshine was 116·5 hours.

# PERISCOPE.

## PLAGUE IN SAN FRANCISCO.

The report of the Plague Commissioners appointed by the United States Government to investigate the recent outbreak of plague in San Francisco appears in the *American Journal of the Medical Sciences* for October, 1901. It presents a most admirable example of the proper method in which to discover the cause and the best method of prevention of outbreaks of epidemic disease. The Government is to be congratulated upon its wisdom in selecting three men of the standing of Professors Barker, Flexner, and Novy, and upon the admirable thoroughness with which they performed their work, enabling the Health Board of San Francisco to promptly efface the disease from that city. The immense value of such a rapid checking of the pestilence cannot be estimated.

Barker points out that the Chinese in San Francisco are, from a sanitary standpoint, much better off than their countrymen in cities of China, such as Hong Kong and Canton. They are on the whole well fed and clothed, and he particularly emphasises the fact that the Chinese in that city wear shoes, stockings, and trousers, since it is believed by many that the bare legs and feet of the Chinese in Hong Kong and Canton had much to do with the frequency of infection with plague in those cities. When dealing with a first case the most experienced clinician hesitates to pronounce the existence of such a disorder in the community ; but if after a careful examination of the physical symptoms the juices from the buboes are extracted by hypodermic syringe and examined for bacteria, they will be found to exist. Likewise the pathological appearances are absolutely characteristic in the great majority of cases.

Flexner considers it proved that no considerable, if any, spread of the bubonic plague in Chinatown, San Francisco, took place by means of rats. No sick nor dead rats were found in the locality in which the cases occurred, with the exception of one, the corpse of which showed it had died of traumatism, and it seems proper to ascribe the limited and localised character of the San Francisco outbreak to this immunity of the rat population of Chinatown. If for any reason the rats had become infected there is no doubt that the virulency of the epidemic would have been greatly increased. Two main forms of the plague may be distinguished—

the bubonic and the pneumonic. Only the bubonic type was present in the recent outbreak of the disease in Chinatown, San Francisco.

### LITERARY NOTE.

MESSRS. CHARLES GRIFFIN & CO., of Exeter-street, Strand, London, have, through the translator, W. H. Thompson, M.D., M.Ch., F.R.C.S., Dunville Professor of Physiology, Queen's College, Belfast, Examiner in Physiology, R.C.S., Eng., and Royal Univ., Ireland, arranged with the distinguished author, Professor Pawlow, of St. Petersburg, for the publication of the English edition of these important lectures, embodying the results of Prof. Pawlow's Researches on the Work of the Digestive Glands, which was recently awarded the Nobel Prize of £11,000. This edition will include the later volume, entitled "The Experiment," &c., together with the notes of the most recent researches of Prof. Pawlow, and will constitute the sole authorised edition for England and America of this important work.

## NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

### *Compound Hyoscin Hypodermic Tabloids.*

As is well known, hyoscin hydrobromide is a powerful sedative, and has been much used in the past to control mania. It is stated that the addition of carefully regulated doses of morphin and atropin considerably increases its efficacy, and the results obtained from the administration of the mixture are reported to be very satisfactory. Messrs. Burroughs, Wellcome & Co. have accordingly prepared the following formulæ :—"Tabloid" (hypodermic) hyoscin compound, A—Hyoscin hydrobromide, gr. $\frac{1}{100}$; morphin sulphate, gr. $\frac{1}{6}$; atrophin sulphate, gr. $\frac{1}{80}$. "Tabloid" (hypodermic) hyoscin compound, B—Hyoscin hydrobromide, gr. $\frac{1}{100}$; morphin sulphate, gr. $\frac{1}{4}$; atropin sulphate, gr. $\frac{1}{500}$. "Tabloids" (hypodermic) hyoscin compound, A and B, are issued in tubes of 12.

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